# PRACTICAL

# DERMATOLOGY

Second Edition

George M Lewis, M D , F A C P.

Professor of Clinical Medicine (Dermatology), Cornell University Medical College, Attending Dermatologist, The New York Hospital

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# Preface to the Second Edition

AS EXPRESSED in the preface to the first edition this book designed as a text for medical students a practical guide for general practitioners and an aid in orientation for other specialists was written to meet the often expressed desire of my students to have a concise and well illustrated text which would still serve their needs after they enter practice It seeks to describe as succinctly as possible the clinical features and the methods of management of the more common skin disorders Emphasis throughout the text is centered on (a) means to accurate diagnosis and (b) selection of appropriate treatment To the student and practitioner recognition and identification of skin lesions present the outstanding dermatologic problem but therapy is often difficult and challenging

The interests of dermatology are many and varied Disease processes may affect any portion of the skin including its appendages (nails and hair) and often coincidentally involve the mucous membranes as in the mouth and anogenital region Disorders of the skin run the gamut from congenital anomalies to neoplasms to infective or non infective inflammatory processes The psyche may be of considerable importance in the etiology of various skin affections The interests of dermatology often overlap those of other specialties which is not surprising since the skin and other organs often share a disease process

An author should consider himself fortunate when he has the opportunity to rewrite his text after a period of reflection particularly when as in my case friends have been so liberal in suggesting improvements The request most often made particularly from medical students was to include colored illustrations in subsequent editions The reason colored plates

[illegible] be prohibitive and the price of the text would have to be raised to an impractical level

Another important and serious criticism of the first edition was the lack of emphasis on the basic sciences as they relate to dermatology This

deficiency was noted particularly by teachers blessed with sufficient time and opportunity to be able to instruct in these subjects Stressing the clinical phase of dermatology might give medical students and practitioners in other fields the erroneous impression that dermatology was a "superficial" specialty without any real substance, and that scientific knowledge in this field was primitive Actually, present knowledge of disease processes in dermatology compares favorably with the status in any other branch of medicine. For obvious reasons, in this practical text, sufficient space is not available to deal adequately with basic sciences However, token information in some fields is included in this edition For instance, the chief pathologic changes in many of the skin disorders are mentioned Chapter 26, Basic Sciences in Dermatology, must be considered only as a brief introduction to a few important subjects and it is hoped will serve to stimulate the scientific curiosity of the reader

In this edition will be found 555 illustrations suitably grouped according to subject matter in 121 plates, an increase from 99 plates in the first edition More than half of the plates retained in this edition were modified by addition or substitution of new pictures A determined effort was made to prevent the text from expanding to an unwieldy size, in spite of which the book has grown by 50 pages Six pages were deleted by omitting the formulary index Since 22 pages were covered by new plates, a total of 34 pages of new reading material was thus added This was used in describing a few diseases not mentioned in the first edition, by expanding certain chapters, particularly Chapter 21 (The Skin and Other Organs), by adding one new chapter, as mentioned, but above all in bringing the text as up to date by deletion, substitution and addition as is possible in this static medium

As for the first edition, Miss Mary Ellen Hopper worked without stint to achieve the best possible illustrations I wish to thank her for a most valuable contribution She is responsible for preparing the pictures in almost all the new illustrations, the only exceptions are two illustrations in Plate 55 kindly supplied by Dr J Lewis Pipkin Dr Douglas P Torre revised and brought up to date Chapters 24 and 25 on therapy and medications Dr Sam C Atkinson prepared the material on anatomy and pathology in Chapter 26 and brief synopses of pathologic findings in the various dermatoses He also selected the histologic material for photomicroscopy Dr William A Anderson's notes on virology in Chapter 26, while brief, are authoritative since he is actively engaged in the work described He kindly supplied the material for Plate 116 Dr John W Dougherty commented on physiology in Chapter 26 Drs Mark Marcano and Robert Abel read the galley proof Dr Leo Lese assembled the index My secretary, Miss Leaura Scalone typed for many hours and I am grateful for her fine copy

My publishers, the W B Saunders Company, have my respect and sincere thanks for their guidance, cordiality and forbearance, and my admiration for their unsurpassed skill in the difficult field of publishing medical texts

George M Lewis

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*Chapter 1*

# Diagnostic Methods

THE SAME basic principles applicable to detection of disorders in any other part of the body are employed in the study of skin diseases *It is desirable to obtain an adequate history, perform a thorough physical examination, and, whenever possible, verify the clinical impression with appropriate laboratory studies* In the taking of a dermatologic history the more important questions will be asked by anyone with a sound medical background, many of the *finer points*, however, will be missed unless the questioner is experienced in the field or uses a special guide Since the basic components of dermatoses are unique, it is important for the student to have a systematic method of examination He should also become familiar with the *name and appearance of the primary and secondary lesions* In addition to the standard, routine laboratory procedures, *a large number of special tests are available* to assist in the more precise detection of diseases peculiar to the skin The following pages outline the procedure of taking the dermatologic history and making the physical examination, with a discussion of various special tests, and a description of primary and secondary skin lesions and the significant localization of various dermatoses, as used in the Skin Clinic of the New York Hospital and at Cornell University Medical College as a guide for the undergraduate and graduate students

## Dermatologic History

*Chief Complaint* Type, location, and duration of present illness

*Family History*

| | |
|---|---|
| *Constitutional* | Cancer tuberculosis, diabetes, goiter and other endocrine diseases |
| *Cardiorenal* | Hypertension arteriosclerosis, apoplexy, nephritis, other |
| *Allergic* | Eczema, asthma, allergic rhinitis (hay fever), gastrointestinal |
| *Infections* | Furuncles, carbuncles, tonsillitis, colitis, prostatitis, cervicitis, abscessed teeth, gingivitis, sinusitis, appendicitis, cholecystitis, etc |

| | |
|---|---|
| *Neurogenic* | Parents and siblings, personality types, nervous breakdowns |
| *Skin* | Acne and seborrhea, dry skin, skin disease, alopecia |

*Past History*

| | |
|---|---|
| *Constitutional* | As above, rheumatic fever, arthritis, weight changes |
| *Allergic* | As above, physical allergy and photosensitivity |
| *Infections* | As above |
| *Injuries* | Types and frequency of |
| *Gastrointestinal* | Appetite, digestion, bowel habits |
| *Genitourinary* | Pregnancies, menstrual habits, urinary history |
| *Previous skin diseases* | Detail if possibly related to present illness |
| *Neurogenic* | Neurotic traits, general adjustments (domestic, marital, occupational), behavior pattern, nervous breakdowns |
| *Habits* | Hours of rising and retiring, sleep, work, eating, bathing, shampoos (frequency), recreations |
| *Drugs* | Includes iodized salt, tooth paste, alcohol and tobacco (detail), laxatives, sedatives |
| *Diet* | Itemize, meal by meal, between meals, including candy and soft drinks. Indicate portions. Ex 2 green vegetables, 4 lumps of sugar |

*Present Illness*

*Date of onset* — Original character and site

*Mode of extension and evolution*, with changes in character of lesions

*General tendency* to regression, stationary character or involution

*Exacerbations and remissions* (partial or complete)

Time of: daily, weekly, monthly, seasonal

Effect of: heat, cold, sunlight

Effect of: change of occupation, holiday, menses, pregnancy, alcohol, foods, intercurrent focus of infection

| | |
|---|---|
| *Environmental allergens* | Silk, wool, ragweed, volatile gases, dusts |
| *Contacts* | If suspected, use special contact history |
| *Neurogenic factors* | Chronological correlation with stresses, strains, and psychic trauma |
| *Previous treatment* | Tabulate, with effect on present illness. Includes injections, ultraviolet lamp, topical measures, x rays (give number of treatments, estimated dose, intervals between, dates) |

# Investigations and Special Tests

## Physical Examination

*There are two organs in all of medicine whose dynamic pathology can be examined directly the skin and the eye* The student should remember that this pathology is alive and in flux, he has the tremendous advantage of the objective approach, as well as the opportunity to study lesions evolving or regressing over a period of time Because of this peculiarity, the student should become familiar with the techniques of a careful detailed examination No field of medicine will reward the objective approach more bountifully than dermatology Careful observation will always be gainful Too often a student will complete an adequate history but confine his examination to a glance The chief reasons for this are *lack of experience* and *lack of system*

*Procedure* The patient should usually be disrobed completely and the entire integument examined unless the eruption is obviously self limited, for example, basal cell carcinoma a plantar wart, or seborrhea of the scalp A good source of illumination preferably daylight *should be available*

1 *Initial Estimate of the Patient* Sex, age, weight and height, color, facies, general impression of physical and mental status

2 *Examination of the Cutaneous Disease*

A *Initial examination* at a distance of three or more feet to determine the "general" features of the eruption

1) DISTRIBUTION Localized or circumscribed scattered, patchy, generalized single multiple, symmetrical, sites of predilection (follicular)

2) ARRANGEMENT *Discrete*, confluent, grouped, sharply or ill defined

3) CONFIGURATION Annular circinate, serpiginous or gyrate linear, zosteriform, iris, moniliform, along lines of cleavage

B *Closer examination to determine nature of individual lesion* (described in order of evolution)

1) PRIMARY Macule, papule (plaque, nodule, tumor), vesicle, bulla, pustule wheal comedo, burrow

2) SECONDARY Scale, crust fissure, excoriation erosion ulcer, atrophy or scarring pigmentary changes

3) QUALITY Size shape, elevation or depth, surface, border, base, color, consistency (soft, fluctuant, infiltrated, indurated), dry, greasy moist or oozing purulent discharge, adherence of scales or crusts

C *Manipulatory Tests*

Palpation for depth consistency and tenderness, diascopic pressure pressure for edema, fat test, dermographia, capillary fragility and postural tests, effect of rubbing the skin, test for atrophy (lateral pressure of skin into folds)

3 *Complete Physical Examination* This should be done in most scattered or generalized eruptions and in all localized eruptions in which a systemic component is suspected.

| | |
|---|---|
| *Neurogenic* | Parents and siblings, personality types, nervous breakdowns |
| *Skin* | Acne and seborrhea, dry skin, skin disease, alopecia |

*Past History*

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| *Constitutional* | As above, rheumatic fever, arthritis, weight changes |
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*Exacerbations and remissions* (partial or complete)

| | |
|---|---|
| | Time of daily, weekly, monthly, seasonal |
| | Effect of heat, cold, sunlight |
| | Effect of change of occupation holiday, menses, pregnancy, alcohol, foods, intercurrent focus of infection |
| *Environmental allergens* | Silk, wool, ragweed volatile gases, dusts |
| *Contacts* | If suspected, use special contact history |
| *Neurogenic factors* | Chronological correlation with stresses, strains, and psychic trauma |
| *Previous treatment* | Tabulate, with effect on present illness Includes injections, ultraviolet lamp, topical measures, x rays (give number of treatments, estimated dose, intervals between, dates) |

reactions which are often helpful Sporotrichin blastomycin and coccidioidin are fungus antigens of diagnostic assistance

5 **Diascopy** Pressure on a lesion with a transparent object (microscopic slide) reveals the appearance of the lesion after the blood has been driven out of the capillaries and superficial venules This procedure is used especially in (lupus vulgaris bringing to view the so called "apple jelly" nodules )

6 **Microscopy** Hand microscopes which will give up to 200 power magnification are available Although their use has not yet become popularized they are of some help in the diagnosis of nevi

7 **Fluorescence Test (Wood's Light)** A filter is placed over a source of ultraviolet rays to concentrate the rays at an average wavelength of 3560 Angstrom units Most if not all fungi fluoresce when examined in this light This light is also of diagnostic aid in tinea capitis and tinea versicolor

8 **Probe Test** A toothpick or similar object is pressed gently against a lesion In certain tuberculids the point of the probe will penetrate the lesion painlessly and remain fixed when the examiner s hand is removed

9 **Curette Test** When the scale of a psoriatic lesion is removed fine capillary bleeding points are visible

10 **Capillary Fragility Test** In this test useful in the purpuras, a blood pressure cuff is placed around the arm for 5 to 7 minutes at a pressure just above diastolic and the purpuric spots in a square inch are counted

11 **Dermographia or artificial urticaria** On vigorous stroking with a blunt probe about 5 per cent of normal subjects exhibit *whealing* This is an exaggerated triple response (Lewis) The significance of this reaction frequent in patients with urticaria is unknown

12 **Nikolsky s Sign.** The examiner s finger is gently pressed against the patient s skin and traction applied The skin separates at the junction of epidermis and cutis leaving a raw exuding area This test is *always* positive in pemphigus and sometimes in dermatitis herpetiformis and erythema multiforme bullosum

13 **Transillumination** A small light is held directly against the skin adjacent to a lesion In nevi which are spreading locally fine strands of dark pigment which are invisible on direct examination can be seen against the pink translucent background

14 **Other Tests** Detailed discussion of all the various other procedures that may be undertaken to assist in determining diagnosis is impossible here *Sarcoptes scabiei* and *various pediculi* may be demonstrated readily and the *Mycobacterium leprae* may be noted in stained section provided the physician is aware of the possibility of the diseases caused by these agents and looks for them The demonstration of the *L E cell* as a diagnostic sign in systemic lupus erythematosus is very important The *general physical economy* of patients with skin diseases must be considered Urinalysis blood count basal metabolism test blood serologic tests and chemical examinations and search for ova in the stool all help to make a diagnosis at times Derm... 
plac

A Temperature, pulse, respiration
B Bones, joints, muscles
C Lymphatics
D Thyroid, obesity, growth characteristics
E Lungs
F Cardiovascular system heart, aorta, and peripheral vessels
G Liver, spleen, and other abdominal organs
H Nervous system, central and peripheral, including disturbances in sympathetic nervous system

## Special Tests

The following special examinations are particularly important in the recognition of many dermatoses

1 **Histopathologic Examination** Because of its accessibility, the skin may be studied more readily than any other organ of the body Small sections of skin may be removed for biopsy purposes without much inconvenience to the patient This is usually accomplished by use of a dermal punch, although an elliptical section of skin may be excised with a scalpel Procaine is usually injected into the skin so that the process is painless, and healing is facilitated by *insertion of a suture or two It is important that* interpretation of the histologic examination should be undertaken only by one who has had considerable experience

2 ***Mycologic Studies*** *Differential diagnosis of a fungus eruption must* be considered in a great many instances, and correct diagnosis is often difficult if not impossible on clinical grounds alone Material from a suspected lesion may be studied both in a fresh preparation made directly from the lesion, and in cultures, with the material incubated on a suitable laboratory medium Such examinations for identification of fungi are extremely helpful in diagnosis of superficial fungus disease and are mandatory in all cases in which diagnosis of deep fungus infection, such as blastomycosis or actinomycosis, is considered

3 **Patch Tests** One of the largest groups of dermatologic patients consists of those suspected of having a contact dermatitis At times the diagnosis is obvious In some patients, particularly ***when the eruption is very acute and most particularly if it is widespread over the body, it is unwise to undertake tests*** to prove the etiology for fear of aggravating the inflammation However, in a fair percentage of patients the identity of the causative agent may be elicited easily and with certainty by means of so called patch tests the suspected allergen being applied to the unbroken skin of the individual usually at a site remote from the eczematous eruption It is important to apply the substance in such dilute concentration that it would not itself be a primary irritant The technique in applying patch tests is not hard to learn, but judgment as to when to apply and what concentration to use comes only from experience after special training If in doubt it would be well not to apply patch tests without consultation

4 **Intradermal Tests.** A positive reaction to Frei antigen is considered specific Other tests employing histamine, tuberculin, and trichophytin elicit

6 *erosion* loss of epithelium down to the basal cell layer
7 *ulcer* breaking through of the basal cell layer
8 *pigmentation* discoloration of the skin due to hemorrhage (iron pigment) to foreign material or to melanin
9 *atrophy* subtle changes consisting of destruction of the elastic tissue and resulting in a whitened slightly sunken epidermis which wrinkles easily when subjected to lateral pressure seen with lupus erythematosus pseudopelade must be differentiated from scar

## Significant Localizations of Dermatoses

The following are some common dermatoses with their typical distribution

1 *acne* sides of cheeks upper chest and back
2 *acanthosis nigricans* axillas groins abdomen
3 *contact dermatitis* at site of contact usually on exposed skin as forehead from hatband dorsa of feet and popliteal areas from nylon eyelid and neck from nail polish
4 *drug eruption* symmetrical usually starts on extensor surfaces frequently generalized
5 *dermatophytosis* between toes soles rarely palms (or skin with thick layer of keratin)
6 *erythema multiforme* (Hebra) dorsa of hands and feet mouth
7 *erythema induratum* calves
8 *erythema nodosum* pretibial area
9 *herpes zoster* along a dermatome supplied usually by one or two dorsal ganglia
10 *lupus erythematosus* (*discoid*) nose, cheeks ears scalp
11 *neurodermatitis* (*disseminated*) bends of elbows and knees face neck
(*localized*) nape in post menopausal women
12 *pemphigus* mouth groin scalp
13 *pityriasis rosea* proximal portion extremities trunk
14 *psoriasis* elbows knees scalp sacrum
15 *rosacea* middle third of face
16 *scabies* fingerwebs flexural surface of wrists axillary folds, umbilicus nipples (in women) penis buttocks
17 *seborrhea* scalp behind ears nasolabial folds over sternum
18 *stasis dermatitis* lower third of leg medial malleolus

disorder may be the first indication of an affection which may also develop in other organs of the body, or be an untoward sign of a systemic disease

## The Dermatologic Alphabet

It is important to learn to recognize the different types of lesions and their modifications The following are the ***fundamental or primary lesions*** in skin diseases

1 ***macule.*** any spot without elevation above the surface of the skin
*Examples* measles, scarlet fever, syphilitic roseola, freckle
2 ***papule.*** any solid elevated lesion of the skin up to 5 mm in diameter
*Examples* furuncle, acne vulgaris, lichen planus.
3 ***nodule:*** a solid elevated lesion of the skin over 5 mm in diameter
*Examples* fibroma, nevus
4 ***tumor:*** a large solid growth, either benign or malignant
*Example* carcinoma
5 ***vesicle·*** an elevated fluid containing lesion up to 5 mm in diameter
*Examples* herpes simplex, varicella, dermatitis herpetiformis
6 ***bulla.*** an elevated fluid containing lesion over 5 mm in diameter
*Examples* poison ivy dermatitis, pemphigus
7 ***pustule.*** an elevated lesion of the skin, up to 5 mm in diameter, containing pus
*Examples* variola, bromoderma, acne vulgaris,
8 ***wheal.*** a distinctive type of solid, elevated lesion of the skin formed by (intense) local, superficial, transient edema
*Examples* the common "hive," or the lesion produced by an intradermic injection
9 ***comedo,*** or ***"black head".*** a plug of secretion retained in a follicle because of closure of its opening by excessive cornification
10 ***burrow*** a characteristic sign of an animal parasite such as *Sarcoptes*

The following are ***secondary or consecutive*** skin lesions

1 ***scale.*** may be fine, coarse, powdery, adherent, invisible (brought out by gently scraping the lesion, as in tinea versicolor), shiny, *dull*
2 ***fissure.*** a crack in the skin extending through the upper cutis, and resulting from marked drying and long-standing inflammation, which vitiates the elasticity of the skin
3 ***scar.*** an extremely important finding in a dermatosis and evidence of destruction of the cutis, often seen in lupus vulgaris, lupus erythematosus, syphilis, dermatitis herpetiformis
4 ***crusts*** dried exudate, composed of serum and cellular detritus overlying an area on which epidermis is lost
5 ***excoriation·*** a linear or "dug out" traumatized area, usually self-produced

6 *erosion* loss of epithelium down to the basal cell layer
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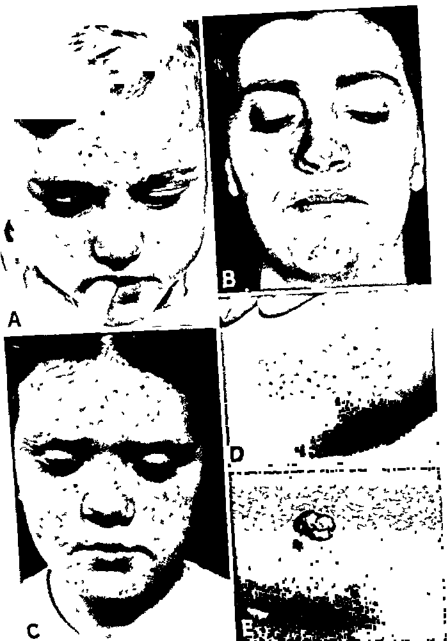



Plate I

***Acne and Comedones*** A *juvenile acne* in a three year old bisexual B acne localized to the chin so-called *menstrual acne* C, comedones as the first evidence of acne in a pre adolescent D comedones in inframammary region, in this instance a response to oil E, *giant comedone* sometimes confused with melanoma keratosis or foreign body

# Acne and the Seborrheic Dermatoses

THESE SEVERAL disorders are grouped together because of their localization to areas of ***skin in which sebaceous glands are numerous*** and in which there is almost always a noticeable increase in their activity There may be considerable variation in other etiologic factors and in clinical appearance, as well as in the methods best suited for their treatment There are indications that there is a hormone in the anterior pituitary capable of causing hyperplasia of the sebaceous glands The rate of flow of sebum is directly proportional to the size of the sebaceous glands Recent work suggests that improper metabolism of sebum after it leaves the gland is one of the basic mechanisms in acne

## Acne Vulgaris

(Gk *akme*, a point)

*Acne vulgaris is seen* chiefly during adolescence, being so common at this period that, in its mildest forms, it may be considered evidence of a normal physiologic state Treatment is advisable as soon as it is recognized, *as the disease often tends to become slowly progressive in extent* and severity Permanent scarring of the skin is a cosmetic handicap which may often be avoided if the disease is not neglected

*Symptoms.* Early evidence of the disease may be noted in the immediate preadolescent period with occasional comedones on the chin, nose, forehead, or less commonly the cheeks (Plate 1) At this time the patient *may* notice that the skin has become somewhat oily At age thirteen or fourteen the number of lesions has often increased, and in *many* instances papules and small pustules have begun to appear (Plate 2, A) By age sixteen, many patients spontaneously recover However, the disease *may become progressively more pronounced,* and, instead of being intermittent, new lesions may continue to develop and the condition show little or no tendency to disappear spontaneously In such patients there is usually an overabundance of sebaceous secretion Several complications may appear the most distressing being that of *scars and pits* (Plate 2, C) Although

*lesions* (Plate 2, B), these are sometimes livid red, very noticeable, and apt to leave pitted scars At times the pustular element is so pronounced that the disease appears to be *predominantly pyogenic*. This has been described as a separate disease, *pyoderma faciale*. Examination of the scalp frequently reveals an excessive amount of oily secretion (*seborrhea*) and occasionally greasy scaling This disease, particularly in its more severe manifestations, is often responsible for personality changes of minor or occasionally of severe degree Fortunately such changes are almost always reversible and disappear when the disease is brought under control

**Etiology.** There is convincing proof that the basic cause is *endocrinologic*. Predominance of the condition in adolescents, the tendency to spontaneous cure, and the frequent exacerbation of the disorder at the time of the menstrual period are too common to be coincidental. Often the eruption is influenced adversely by such factors as *diet, lack of sleep, overwork* or *worry, constipation,* and *lack of exercise* Diet, particularly, is almost always an important consideration In some patients the relationship between the ingestion of a certain food and the appearance of acne lesions is so constant as to suggest an allergic reaction Pyogenic organisms invading the pilosebaceous portions of the skin play a secondary though often important part in the development of pustular lesions which appear in nearly all patients (Plate 3, A) The infectious character of the disease is often aggravated by *trauma*, such as squeezing and picking It is well known that patients almost always improve during the summer months, and, conversely, the eruption frequently becomes more evident during the winter Improvement in the summer is often attributed to sunlight, additional vitamins, and increased metabolic activities, whereas the *exacerbation during winter* may be due to more sedentary occupations, nervous factors (perhaps through the gastrointestinal tract), and lack of vitamins An acneiform eruption may complicate the administration of corticotropin and is not infrequent after prolonged halogen intake

**Treatment** Since some patients develop scars and pits at an early stage of the disease and since there is no way of predicting when the condition will spontaneously resolve, it is never safe passively to anticipate cure On the initial examination, the patient should be carefully observed for evidence of sequelae, and if scars are present this fact should be recorded *The sooner treatment is undertaken, the more certain the response,* and frequently the shorter the time necessary to obtain the best re[illegible]
The aims of treat[illegible]
to br[illegible]
latter [illegible] the patient is at least sixteen years old

1 *Diet* The patient should have *plenty of nutritious food,* including meat or fish once daily Milk and cheese are valuable and *should* not be restricted A citrus fruit, two cooked vegetables, and one raw vegetable daily are important items *Chocolate in all forms should be banned.* This includes chocolate ice cream chocolate icing, chocolate cake, chocolate pudding, chocolate sauces This *also applies* to cocoa Foods to be omitted or restricted include fried foods, pies, pastry, rich desserts, nuts, and bacon.




**Plate 2**

*Acne Vulgaris* A moderately severe with comedones papules and pustules B the formation of cysts is a complication C, permanent scars may be sequelae if acne is neglected D extensive distribution of cysts pustules and scars

such scarring may appear at any stage of the disease, it most frequently follows the involution of pustules Scars on the chin or middle third of the face are not so conspicuous as those on the upper, outer cheeks, where they are difficult to mask Another complication is appearance of the disease on *widespread areas of skin* such as the chest, back and occasionally the extremities A third complication is the appearance of deep, *cystic*

In many instances food selection is not possible and one must be careful not to reduce the caloric intake below that required for good health Ice cream may be eaten sparingly but only in fresh fruit flavors and the ices are more desirable Cognizance should be taken of the needs of these young patients for energy foods it is therefore permissible for them to eat some hard candy with emphasis on the consumption of such food at the end of the meal Eating between meals should be discouraged A *vitamin supplement* utilizing one of the commercial multivitamin products may be advised or better still the ingestion of vitamin A capsules (50 000 units) one daily in courses of 3 or 4 weeks followed by 1 or 2 weeks rest and then repeated

2 *Local Measures* Usually some form of astringent or peeling treatment is indicated The comedo is not dirt plugging a pore as commonly supposed but rather is secretion retained in a follicle because of closure of the follicle opening by excessive cornification Sometimes the use of an *abrasive soap,* such as Lava is useful Contrary to what one might suspect, this is usually well tolerated

The preparation most widely used for local application is *white lotion,* N F The patient is instructed to pat this on the affected skin at night The lotion dries and should then be left till morning when it may be washed off Good results may be noted by dryness of the skin by fewer lesions and by a reduction in size of the existing lesions The effect may gradually become less pronounced and it is then desirable to *increase* the strength of the lotion by increasing the concentration of the active ingredients It is also possible to heighten the effect of the application by rubbing in the lotion till dry and then making a second application over the first Other standard products for local application at bedtime are *Kummerfeld lotion* and well diluted sulfurated lime (Vleminckx) solution N F The latter solution may also be useful in deep seated pustular or cystic acne diluted approximately 1 teaspoonful to 8 ounces of hot water and applied as a wet pack for 15 to 30 minutes

If the condition shows little or no signs of response it may be advisable to prescribe a lotion for daytime use such as a ten per cent solution of sodium hyposulfite in fifty per cent each of alcohol and water This has the advantage of being colorless and may therefore be applied in the morning A number of *other lotions and ointments* which contain such drugs as sulfur resorcin salicylic acid and ammoniated mercury are in common use Care should be taken never to prescribe ammoniated mercury and sulfur in the same lotion as the chemical reaction between these drugs leaves a black deposit of mercuric sulfide on the skin (see Chapter 25 Dermatologic Formulary)

3 *Ultraviolet Ray Therapy* Either the natural rays of the sun or the rays generated with an ultraviolet ray machine when comb ned ... remed es ...

... rays probably derives ... peeling that follows exposure It is also thought that there is

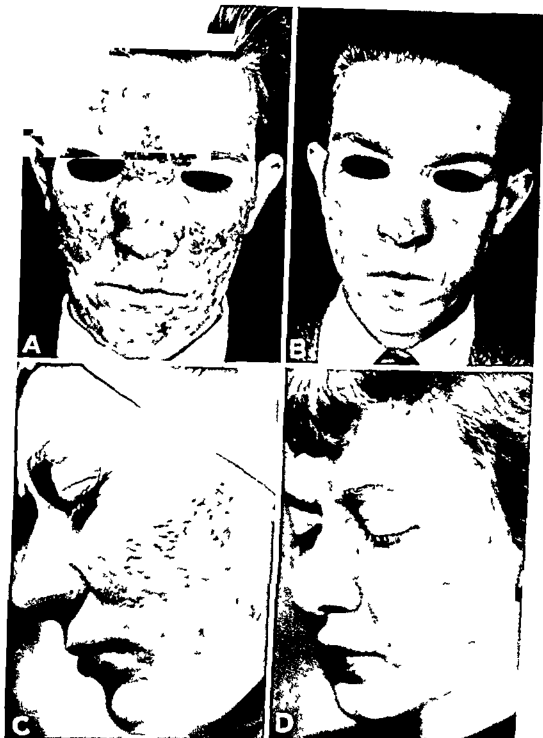



Plate 3

*Acne Vulgaris Results from treatment* A deep seated pustulo cystic acne many scars are present B favorable result after x ray therapy C residual scars so often a sequel to acne D cosmetic improvement from surgical abrasion

8 *Other Remedies* Anemia, particularly in young girls, should not be overlooked When it is found, appropriate therapy with iron is indicated *Intramuscular injections* of crude liver extract have been used in the past and are sometimes beneficial even when anemia is not present The doctor should inquire into the habits of the individual and make certain that *sufficient rest* is taken A daily bowel movement is essential In this connection it must not be overlooked that young people, particularly girls, are apt to have irregular elimination habits Laxatives are almost never indicated for patients with acne but the development of a regular habit of elimination is often of great importance

Scarring resulting from acne if conspicuous may be partially removed by *dermabrasion* or surgical planing This office treatment is performed by using a power driven rotating wire brush Immobility of the skin and partial anesthesia is achieved by freezing with freon or ethyl chloride This procedure is usually repeated once or twice at intervals of about three months The final result is usually a satisfactory improvement in which the scars are less apparent

From all the foregoing comments it is apparent that *this disease should be taken seriously and the patient treated with sympathy and understanding* Under no consideration should the patient be told that he will outgrow the disease with the inference that treatment is not indicated even though the disease may persist for several months or years This attitude is not only bad psychologically but unsound therapeutically Occasionally the presence of acne in a sensitive patient results in psychologic difficulties requiring the skillful services of a psychiatrist Fortunately most of the psychic *effects are transitory* and disappear with the disease

## Rosacea

Rosacea is a chronic disorder of middle age often having a superficial resemblance to acne (Plate 4) According to Sequeira *"the basic factor in rosacea is a vasomotor instability in a seborrheic subject"*

Symptoms The eruption is usually localized to the *middle third of the face* (Plate 4 C) a *region often referred to* as the flush area In patients in whom the condition has been neglected for months or years the disorder may also be seen *on the outer* cheeks forehead and chin The manifestations vary considerably *in severity* Occasionally there is *simple erythema*, but usually there are *other lesions* consisting of *papules, pustules,* and *telangiectasia in varying degree There is often* an associated seborrheic condition of the scalp Ocular *complications* are not uncommon, consisting usually of blepharitis but *occasionally* of keratitis and corneal ulceration The ultimate sequel to *a long continued* congestion is the development of *hypertrophy* A bulbous *enlargement* of the nose sometimes develops this extremely disfiguring *condition* being known as *rhinophyma* (Plate 4 D)

Etiology While the exact mechanism of the production of rosacea is not fully understood several *factors* are known to play a part Most important among them are an associated seborrheic dermatitis *endocrine*

a tonic effect For this reason the treatment may be given to all parts of the body and not alone to the affected area

4 *Antibacterial Remedies* When the lesions are predominantly pustular, indicating an important pyogenic phase, a course of staphylococcus toxoid vaccine may be given It is well to start with a small amount, gradually increasing the dose The results will probably be disappointing if reliance is placed on vaccine alone However, as ***an adjunct to other treatment,*** it may help some For immediate relief of a severe pustular phase, a short course of a tetracycline drug may be advisable, such as 250 mg three times daily after meals for three days, followed by two weeks' rest This sequence may be repeated several times

5 *Antiseborrheic Measures* In almost all cases it is advisable to ***shampoo the scalp once or twice weekly*** If greasy scaling is noted, a scalp lotion should be prescribed (see Seborrheic Dermatitis, infra)

6 *Endocrine Therapy* Indiscriminate use of endocrine products is to be condemned However, in ***selected female patients,*** particularly when there is a history of exacerbation just prior to the menstrual period, the use of estrogenic hormone is valuable Therapy may be controlled by use of ***the vaginal smear technique.*** The drug is usually administered starting fourteen days before the expected beginning of the menstrual period and discontinued with the onset of flow Estrogenic or other hormonal preparations should not be administered to male patients

Small doses of ***thyroid*** (¼ grain daily) are often useful and may be prescribed without a basal metabolism test, provided there is no obvious evidence of thyroid disease such as enlargement of the neck, nervousness, loss of weight, protruding eyes, or tachycardia

7 *X-Ray Therapy* Roentgen therapy is reserved for patients in whom other remedies have failed, deep seated pustular or cystic lesions predominate, or scarring has already appeared For one or more of these indications, administration of x-rays may bring results not obtainable with other methods Such treatment ***should not be undertaken except by a dermatologist*** who has been trained in the intricacies of the use of the modality When given according to the techniques which have been developed, there is ***no need to fear that undesirable after-effects will occur.*** X-ray treatment has been given a bad name in the past for several reasons Excessive and uncertain dosage has resulted from inexperience or carelessness on the part of the physician, or lack of standardization of equipment Modern x-ray machines are calibrated carefully and regularly inspected, and dermatologists are trained to give x ray therapy with the thought of safety to the individual patient uppermost in their minds Moreover, many patients and doctors alike have mistakenly believed that scarring of the skin seen in acne patients after x-ray treatment was caused by the treatment It is well known that ***acne itself causes scarring,*** and there is no evidence that the scars seen in acne patients have ever been due to treatment received with x-rays It should also be stressed that there is ***no danger of malignancy supervening*** on skin that has received conservative radiation of this type

part of the face, such as the chin, the tendency is for lesions to develop on the cheeks, forehead and chin with few on the nose Rosacea, on the other hand, tends to localize in the middle third of the face On careful examination of the skin, comedones will be discovered in acne vulgaris, whereas in rosacea this finding is lacking The presence of telangiectasia is also an indication of rosacea

Treatment 1 *Diet* Rosacea and rhinophyma are sometimes and often unfairly referred to in the vernacular as "rum nose" Almost always some improvement will be obtained by *careful restriction and selection* of diet, consumption of spicy stimulating foods, hot drinks, and alcohol should either be eliminated or markedly reduced The essential food elements should be eaten, with emphasis on vegetables and salads Brewer's yeast powder, as an additive, is favored by some

2 *Systemic Treatment* A *gastric analysis* is important and desirable in every patient Although hypochlorhydria is a common finding (in 50 per cent or more of the cases), it is well known that *administration of hydrochloric acid* is of benefit even when the test gives normal values Furthermore, administration of hydrochloric acid is so often effective that if good results are not obtained one should inquire into the correctness of the diagnosis It is customary to prescribe dilute hydrochloric acid, 5 drops three times a day in one half glass of water, gradually increasing the dose to 15 drops or until uncomfortable symptoms develop The drug is then discontinued for several days until evidence of gastric irritation has completely disappeared The patient is then continued on a *maintenance dose* below the level that produces symptoms, which may be necessary for many months or even years Capsules of *Acidulin* or *Acidol Pepsin* are often preferred as more convenient, particularly when meals are eaten away from home

3 *Local Treatment* The use of white lotion and other acne lotions is often effective and helpful (see Acne Vulgaris) If seborrheic dermatitis is noted on the scalp, as evidenced by extreme oiliness or greasy scaling, this should be given appropriate treatment (see Seborrheic Dermatitis)

4 *X-Ray Treatment* Roentgen irradiation is frequently useful, particularly in the pustular types This must be administered by a dermatologist

5 *Electrolysis* After the disease has been brought under control, telangiectases, if present, may be destroyed by means of *electrolysis*

6 When the active disease has responded to therapy or has improved spontaneously the bulbous [illegible]
surgical intervention
by paring down the
electrodesiccation [illegible] scalpel or by means of

7 *Endocrine Therapy* Estrogenic hormones are sometimes administered The effect is not dramatic and there is some doubt whether any improvement is to be expected The dosage should be lower than in acne

8 Antibiotics administered orally for short periods sometimes are




Plate 4

*Rosacea* A the distribution is typical B same patient after therapy C the eruption tends to be limited to the middle third of the face *D rhinophyma* the end stage of rosacea with hypertrophy sometimes forming a tuberous unshapely mass

*changes* incident to middle age *nervous factors* perhaps due to the menopause or to exogenous stimuli and *hypochlorhydria* which is a frequent finding

Differential Diagnosis The chief differentiation is from acne vulgaris This may be difficult in a patient who exhibits papules and pustules on the face Acne vulgaris is usually seen in young people whereas rosacea affects persons of middle age Although acne may at times localize in one

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Treatment 1 *Diet* Rosacea and rhinophyma are sometimes and often unfairly referred to in the vernacular as "rum nose" Almost always some improvement will be obtained by ***careful restriction and selection*** of diet, consumption of spicy stimulating foods, hot drinks, and alcohol should either be eliminated or markedly reduced The essential food elements should be eaten, with emphasis on vegetables and salads Brewer's yeast powder, as an additive, is favored by some

2 *Systemic Treatment* A ***gastric analysis*** is important and desirable in every patient Although hypochlorhydria is a common finding (in 50 per cent or more of the cases), it is well known that ***administration of hydrochloric acid*** is of benefit even when the test gives *normal values* Furthermore administration of hydrochloric acid is so often effective that if good results are not obtained one should inquire *into the correctness* of the diagnosis It is customary to prescribe dilute hydrochloric acid, 5 drops three times a day in one-half glass of water, gradually increasing the dose to 15 drops or until uncomfortable symptoms develop The drug is then discontinued for several days until evidence of gastric irritation has completely disappeared The patient is then continued on a maintenance dose below the level that produces symptoms, which may be necessary for *many months* or even years Capsules of *Acidulin* or ***Acidol Pepsin*** are often preferred as more convenient, particularly when meals are eaten away from home

3 *Local Treatment* The use of white lotion and other acne lotions is often effective and helpful (see Acne Vulgaris) If seborrheic dermatitis is noted on the scalp as evidenced by extreme oiliness or greasy scaling, this should be given appropriate treatment (see Seborrheic Dermatitis)

4 *X-Ray Treatment* Roentgen irradiation is frequently useful, particularly in the pustular types This must be administered by a dermatologist

5 *Electrolysis* After the disease has been brought under control, telangiectases, if present, may be destroyed by means of ***electrolysis***.

6 When the active disease has responded to therapy or has improved spontaneously the bulbous residuum known as rhinophyma often requires surgical intervention A remarkable improvement may often be obtained by paring down ***the hypertrophic tissues*** with a scalpel or by means of electrodesiccation

7 *Endocrine Therapy* Estrogenic hormones are sometimes administered The effect is not dramatic and there is some doubt whether any improvement is to be expected The dosage should be lower than in acne

8 Antibiotics administered orally for short periods sometimes are




**Plate 4**

*Rosacea* A the distribution is typical B same patient after therapy C the eruption tends to be limited to the middle third of the face D *rhinophyma* the end stage of rosacea with hypertrophy sometimes forming a tuberous unshapely mass

*changes* incident to middle age *nervous factors* perhaps due to the meno pause or to exogenous stimuli and *hypochlorhydria* which is a frequent finding

Differential Diagnosis The chief differentiation is from acne vulgaris This may be difficult in a patient who exhibits papules and pustules on the face Acne vulgaris is usually seen in young people whereas rosacea affects persons of middle age Although acne may at times localize in one

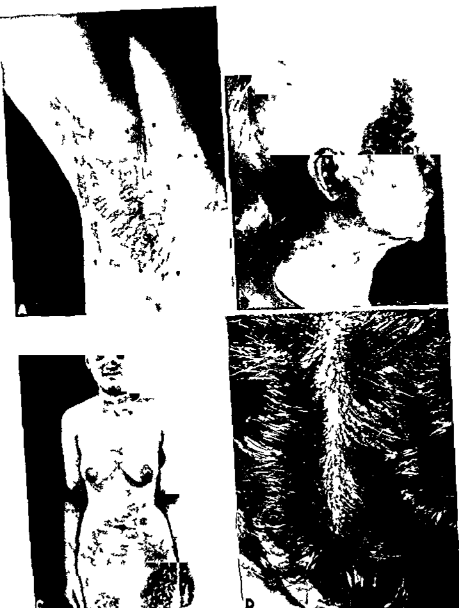



**Plate 5**

*Seborrheic Dermatitis* A axillary involvement the disease tends to localize in intertriginous areas B there is a frequent association with pyoderma and at times it is difficult to decide exactly which component is the more important C acute inflammatory type in widespread distribution D *pityriasis capitis* dry dandruff without loss of hair

helpful Tetracycline, 250 mg three times daily after meals for one week, is usual This may be repeated after a rest period of two weeks

9 *Psychiatric Therapy* Although many of the patients are emotionally unstable, there is seldom any basic psychiatric condition Consultation with a psychiatrist is occasionally indicated

## Seborrheic Dermatitis

(L *sebum*, tallow + Gk *rhoia*, a flow)

Seborrheic dermatitis predominantly affects the scalp but may develop in other parts of the body, particularly intertriginous areas The mild form is common and is frequently overlooked or considered to be a normal condition

**Symptoms.** In its mildest form the condition may be manifested by a condition of ***excessive oiliness.*** *This is recognized simply by the short* time necessary for its development after a shampoo If the scalp becomes noticeably oily, as evidenced by matting together of the hair or objectively by the stain left on filter paper rubbed over the scalp, within two or three days a pathologic state should be recognized This may be localized to the scalp but often the face, particularly the middle third, is affected as well As noted, greasiness or oiliness of the skin ***frequently accompanies both acne and rosacea.*** In many instances scaling of the scalp develops and in a typical case is greasy and adherent *Greasy scaling* is usually accompanied by discomfort and pruritus, leading to scratching, which is followed by introduction of pyogenic organisms into the skin This frequently results in development of ***pyogenic superinfection,*** producing areas of exudation, crusting, and additional inflammation With the advent of greasy scaling and pyogenic superinfection, the condition often spreads behind the ears, along the sides of the nose and to the eyebrows, and frequently affects the margins of the eyelids In severe instances the condition may spread to the axillae (Plate 5, A), groin, and umbilicus, and also to flat areas of skin In these *widespread instances* it is questionable whether the condition should be labeled seborrheic dermatitis or whether the pyogenic component is not so much more important as to require its being labeled a pyoderma (Plate 5 B)

Another scalp condition known as *pityriasis capitis* (Plate 5, D) is *evidenced by dry scaling Some observers believe* that the two conditions are synonymous the only difference being in the relative activity of the *sebaceous glands* and the greater frequency of complications when the excessive oily secretion is present

As a common sequel to both the dry and the oily, scaly and crusted conditions of the scalp, ***loss of hair may occur.*** At first this may be reversible but in long continued and neglected instances the loss will be permanent This constitutes one of the commonest reasons for premature loss of scalp hair

**Etiology.** The reason for overactivity of sebaceous *glands is not fully* explained Errors of diet, ***endocrine dysfunction,*** and ***emotional instability*** all appear to be contributory *Pityrosporum ovale is thought by many to*




Plate 5

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be a factor in the production of the inflammatory phase of the disease As mentioned under symptoms the *pyogenic component* due to Staphylococcus is undoubtedly important in many instances The incidence is higher in certain diseases of the central nervous system such as paralysis agitans and epilepsy.

**Pathology.** Elongation of the rete pegs and acanthosis suggest psoriasis, spongiosis if present rules out the latter disease

**Differential Diagnosis.** *No difficulty will be experienced in recognizing uncomplicated, oily, scaly scalps or scalps with adherent greasy* scaling In more advanced instances, *however, the scalp disorder may be* somewhat ***difficult to distinguish from psoriasis.*** It should be remembered that in seborrheic dermatitis the scale is usually oily or greasy, whereas in psoriasis it is dry Seborrhea tends to be more diffusely present than psoriasis, which is usually plaquey The diagnosis is more apt to be psoriasis if the disease encroaches on and extends along the anterior hair line Careful search should be made for the disease in other parts of the body where the distribution or clinical features may be more characteristic At times the lesions on the trunk may be difficult to distinguish from *pyoderma (which as noted may be a complication), from **pityriasis rosea,** and from* ***tinea corporis*** (see Table 4, Differential Diagnosis of Maculo Papulo-Squamous Eruptions, Chapter 8)

**Treatment.** 1 *Local Remedies* THE SCALP A medicated shampoo once or twice weekly is indicated in most instances Soluble tar shampoo (1 per cent) and tincture of green soap are standard and reliable time-honored agents for mild and uncomplicated cases There are several commercial products of merit When there is considerable associated inflammatory reaction, pHisoHex (having a neutral pH) is well tolerated and *a valuable cleansing agent Selsun contains selenium disulfide* ($2\frac{1}{2}$ per cent) in an emulsified suspension This should be rubbed on the wet scalp and rinsed after 5 minutes After a few weeks some scalps develop increased oiliness and a change is then desirable ***Fostex cream*** contains hexachlorophene (1 per cent) in an emulsion type base containing soapless cleansers and wetting agents This should be rinsed off after five to ten minutes ***Daily local applications*** may be employed usually in the form of a lotion *Prescriptions for scalp preparations may be found in* Chapter 25, Dermatologic Formulary A commercial product, ***Sebizon*** *may be utilized, this contains sulfacetamide* (10 per cent) and methylparaben (0 1 per cent) in a jelly base

THE BODY On the body, a salve containing 2 per cent ammoniated mercury may be applied At times the eruption responds better to application of sulfur ointment than to ammoniated mercury Care should be taken not to mix these two drugs in the same prescription, as they are incompatible

2 *Diet* The patient should be instructed to eat a ***low fat diet*** It is well to advise ***increased vitamins,*** particularly vitamin B complex The patient should also be instructed in proper hygiene, and should have at least ***eight hours sleep*** each night and ***regular exercise.***

3 Antibacterial Measures When the pyogenic component is predominant *antibacterial measures* may be advisable If a highly inflammatory condition is present wet boric acid compresses may be used Antibiotic therapy should be used cautiously as some patients are hypersensitive to penicillin This and other antimicrobials such as neomycin may be tried locally on limited areas and if they are well tolerated their use may be extended to the necessary sites At times daily or weekly intramuscular injection of penicillin 600 000 units or oral administration of aureomycin or terramycin 250 mg three times a day after meals will bring the condition under control so its more chronic features may be disposed of in other ways One should not consider antibiotic therapy a curative procedure but use it simply to help get the condition under control

4 Endocrine *Therapy* Thyroid in small doses (0 15 gm once or twice daily) is often useful

5 *Psychiatric Therapy* Psychiatric help may occasionally be necessary or advisable

*Chapter 3*

# Pruritus

## *(Symptomatic and Essential; Psychogenic Implications)*

PRURITUS (L *pruritus,* itch) or itching is a common complaint of patients with many different skin diseases It is the usual reason why a *patient with a skin disease consults the doctor* If severe, and particularly, if it interferes with rest, the patient is more interested in its relief than in securing an objective cure or improvement of the skin disease This complaint should always receive careful consideration from the standpoint of its cause It may be readily apparent if the patient presents a florid skin disease. In so-called ***essential pruritus,*** the etiology may not be so readily determined Another group of patients exhibits symptoms closely allied to that of itching One of these is the sensation of crawling in the skin (***formication***). The degree of itching varies considerably, depending on many factors (1) a patient of the phlegmatic type will experience less difficulty *than a neurotic individual,* (2) *some skin diseases almost always itch* severely and other skin diseases rarely bother the patient, but some exceptions do occur, (3) ***itching is almost always worse at night,*** which may be due to change of temperature, habits of a parasite, or lack of competition from other sensory stimuli Other factors will be discussed under the heading of Essential Pruritus Dermatoses in which itching is almost unknown include the skin manifestations of secondary syphilis and parapsoriasis

## Physiology of Pruritus

Because of its subjectivity, and resultant impossibility of study in the laboratory animal, the study of the mechanism of pruritus has been for the most part restricted to inference and introspection In spite of this obstacle to exact and controlled experiment, a large body of work has grown over the years in this most baffling of sensations

*Available evidence indicates that* ***pruritus is mediated by pain receptors and the so-called "second" or "slow" pain fibers.*** The latter are non-myelinated, have a diameter of about 5 millimicrons, and a conduction rate of about 1 M/sec It has been assumed that the *pain receptors mediating itch are located within the epidermis,* although at present there is some question whether or not there are nerves in the epidermis Recent

work shows that itch is mediated by proteolytic enzymes. Histamine is not necessary to produce itch. When an area is denuded of epidermis no itch can be felt from that area although pain is a prominent symptom. It is believed that in animals the itch center lies in the medulla below the acoustic nucleus.

Probably the *differentiation of itch and pain is accomplished centrally*, and is possible because of the lower frequency and intensity of the itch impulse as opposed to the pain impulse. Section of the anterolateral tract of the spinal cord abolishes itch. In the denervated area the patient has normal tactile sensation and can distinguish dull from sharp stimuli.

## Symptomatic Pruritus

Etiology. Itching may be secondary to a somatic skin disease, as noted elsewhere. It is a *common accompaniment of most eczematous eruptions*. Since eczema may be a complication of almost any other skin disease one must determine whether the itching is *due to eczema or to some other* underlying condition. In order to arrive at a correct solution to the question of the cause of the itching some knowledge of dermatologic diseases and experience in their recognition is necessary. In addition to eczematous eruptions *scabies, urticaria, dermatitis herpetiformis, and pediculosis* should be considered when the *history indicates a severe pruritus*. These diseases have characteristics which can usually be readily identified. *Some drug eruptions* itch severely; others are asymptomatic. Pruritus may be caused by *dryness of the skin*.

Treatment. The prime consideration should be treatment of the underlying basic cause of the pruritus. In addition measures for relief, both internal and external, may be considered. The subject *is considered in detail* under the various diseases, particularly contact dermatitis.

## Essential Pruritus

The term essential pruritus denotes the *presence* of itching without the coincidental presence of a somatic skin *disease*.

*Etiology*. Patients exhibiting *pruritus* without any visible evidence of a somatic disease per se constitute one of the most important groups of patients. It is customary to further subdivide the patients into those exhibiting (1) *local pruritus* and (2) *generalized or extensive pruritus*. Pruritus localized to one part of the body such *as the* [illegible] or the [illegible]

[illegible] agent in pruritus and one [illegible] infection. Diabetes is an [illegible]

[illegible] different factors [illegible] patient is middle aged or elderly. If the itching is noted only during the winter months the diagnosis of *pruritus hiemalis* is fairly

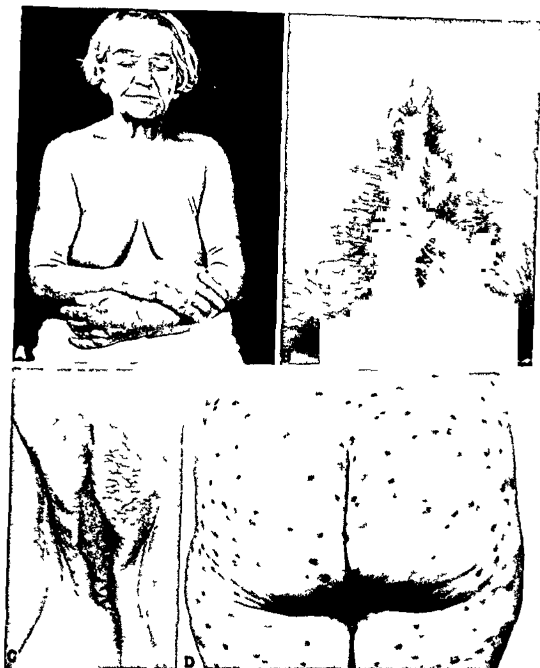


**Plate 6**

*Pruritus* A pruritus senilis thickening of the skin due to rubbing to be differentiated with care from lymphoblastoma B *pruritus ani* skin changes are secondary to scratching C *pruritus vulvae* localization to left labia with edematous reaction to trauma D *neurotic excoriations* the patient readily admitted her responsibility

evident An annoying pruritus from dry skin incidental to cold weather and old age (***pruritus senilis***) is not uncommon (Plate 6 A) There is always the possibility that the pruritus is due to ***internal malignancy*** usually lymphoblastoma (mycosis fungoides Hodgkins disease or leukemia) and this of course is always a threat that should be tracked down ***Other less frequent causes*** of generalized itching include reactions to a drug such as phenobarbital, intestinal parasites, jaundice and diseases of

the liver, nephritis and diabetes Frequently, then, a patient must have a thorough medical work up before the cause of the pruritus is determined

Symptoms The natural result of the itch reflex is traumatization of the skin usually by scratching This is a normal physiologic response, and while it is usually under the control of the patient to some degree during the waking hours, production of self inflicted lesions is a common nocturnal occupation Scratches and excoriations may be sufficiently severe to

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often is a complication The application of irritating or sensitizing drugs to treat the pruritus may initiate a contact dermatitis

Treatment In both the localized and disseminated forms of idiopathic pruritus a determined effort to find the underlying factor or factors is the prime consideration The cause may be *obscure* It is frequently necessary to return to the problem many different times before an adequate explanation is found Many of the chief possibilities are listed under *etiology*

Symptomatic relief is also important The following indicate some of the available methods

1 *Topical Therapy* Local applications should be mild and not irritate already inflamed skin It is often well to begin with wet boric acid packs for 15 to 30 minutes *An ice pack* is often soothing Drugs such as menthol (0 5 per cent) or phenol (1 per cent) in neocalamine lotion, N F, or rose water ointment U S P, are temporarily helpful Hydrocortisone lotion (0 5 per cent) or cream (2½ per cent) has good value to suppress itching

2 *Roentgen Therapy* X ray therapy (fractional dosage) is often effective

3 *Antihistamines* Antihistamine drugs, administered internally and in adequate dosage are almost always of great importance

4 *Temaril* 2.5 mg 3 times daily after meals rarely may help

5 The *tranquilizing drugs* (meprobamate, reserpine) are occasionally of considerable value when prescribed with other remedies

## Neurotic Excoriations

Etiology Individuals may traumatize their skin because of a "nervous habit" In the same way a person bites his nails, many individuals pick at their fingers bite their lip or otherwise exhibit a mannerism of behavior to be variously explained In reality such habits seem to have little significance in the mental health of the individual When the habit is severely aggravated such individuals are said to have a "psychosomatic disease" On questioning they readily admit their responsibility for the condition of the skin and agree that if they stopped scratching the condition would entirely disappear

Symptoms The condition is usually localized to one part of the body The lesions are sometimes extensive on the arms or trunk but are rarely

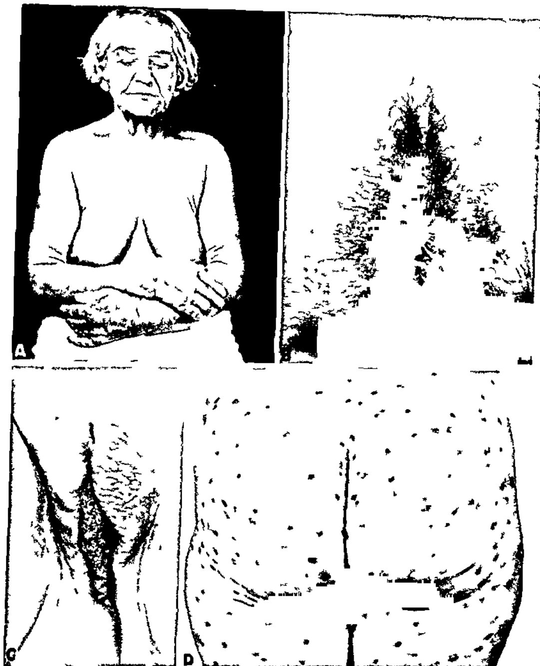



Plate 6

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evident An annoying pruritus from dry skin incidental to cold weather and old age (*pruritus senilis*) is not uncommon (Plate 6 A) There is always the possibility that the pruritus is due to *internal malignancy*, usually lymphoblastoma (mycosis fungoides Hodgkin's disease or leukemia) and this of course is always a threat that should be tracked down *Other less frequent causes* of generalized itching include reactions to a drug such as phenobarbital intestinal parasites jaundice and diseases of

seen on the face Secondary pyogenic infection may occur The nature of the condition is to be recognized from the angular border, the lack of symmetry the negative features of other somatic diseases and the history of self trauma

Treatment Patients occasionally obtain relief from antipruritic remedies indicating that there is basically a mild pruritus More permanent relief is obtained by attention to the underlying mechanism with relief of the insecurity usually responsible

## Delusions of Parasitosis

The patient believes he is suffering from some microbial disease (Plate 7 B)

*Etiology* This condition is important as it almost always indicates that the patient has a severe psychosis

Symptoms The patient frequently presents a specimen bottle containing material removed from the skin He usually complains of a crawling sensation (formication) The story of parasites is plausible and probably has fooled relatives and friends but the presence of an artificial lesion is rather easily determined Sometimes the patient has traveled from doctor to doctor and the lesion may resemble ***superficially a somatic disorder,*** simulating epithelioma actinomycosis or some other dermatosis Not in frequently the face is affected

*Treatment* It is not always necessary that the patient be institutionalized Psychiatric therapy is not too impressive in its results The patient may sometimes learn to live with his malady and have sufficient insight to realize its nature

## Feigned Eruptions

Self produced lesions (dermatitis factitia) may be deliberate and designed to deceive (Plate 7 C D)

Etiology There may or may not be a definite psychosis

Symptoms Children who wish to deceive in order to obtain sympathy often pull out or rub out their scalp hair This is known as *trichotillomania* A wad of hair is usually found under the pillow or bed Sometimes the resemblance to tinea capitis is striking As a rule no significance in regard to the internal economy will be demonstrated but it is advisable to investigate carefully the mental status of the patient While children may traumatize their skin in order to simulate a skin disease for the purpose of obtaining sympathy or to avoid work, etc this form is usually seen in adults *Localized or extensive mutilations* of the skin may be practiced by individuals for a variety of reasons At times the results of the self produced eruption simulate a somatic disorder so closely that the true nature of the malady may not be recognized for many months or years The case may be cited of an individual who was paid compensation for several years for an eruption on the arms supposedly due to sensitivity to something in his occupation as a grocery clerk When he was confronted with the true nature of the condition and compensation was stopped he




Plate 7

**Eruptions of Artificial Causation** A *neurotic excoriations* a location favored by many patients B *delusion of parasitosis* this may be a component of a serious psychosis C *dermatitis factitia* of arm self produced lesions with an attempt to deceive to qualify for monetary compensation D *dermatitis factitia* in this case the lesions are irregularly outlined and follow no disease pattern At times differential diagnosis may be difficult

# The Eczematous Dermatoses

THE TERM eczema (Gk *ek* out + *zeo* boil) was formerly used to denote a large group of skin disorders many of which are now designated by more specific names There is some advantage in retaining the term using it in a broad sense and also for designating eruptions in which a more definite diagnosis is impossible Eczema may be considered a non infectious inflammatory dermatosis in which the affected skin is erythematous and may also include macules papules vesicles bullae and lichenified patches as well as edema Since the condition is usually pruritic excoriations crusting and secondary infection are not uncommon sequelae The terms "eczema" and dermatitis" are herein used synonymously and interchangeably Since the various eczematous eruptions constitute a large proportion of the patients seen in practice the subject is discussed in some detail under the following headings

1 Contact dermatitis
2 Atopic eczema (neurodermatitis)
3 Infantile eczema
4 Stasis eczema
5 Nummular (orbicular) eczema
6 Infectious eczematoid dermatitis
7 Pyogenic eczema
8 Eczema in the elderly
9 Autoeczematization
10 Generalized exfoliative dermatitis

## Contact Dermatitis

This disease results from an inflammatory reaction of the skin caused by contact with something in the external environment (Plates 8 9 10 11)

Etiology The cause may be an *allergen, promoting* trouble because the patient s skin is highly sensitive to it The range of possible agents which may produce a contact reaction is extremely large In an individual patient however this range contracts to a limited few so that investigation is

recovered rapidly Soldiers about to go into battle have been known to develop extensive and sometimes mutilating skin lesions, later determined to be artificial and self-produced

**Treatment** The proof of artificial lesions is not always easy Occasionally the patient must be hospitalized and the affected skin covered with an occlusive dressing, rapid healing denotes deception Negative laboratory findings for the suspected somatic diseases to be differentiated are also important It is seldom possible to find the instrument or material (acid, etc ) which an individual uses to traumatize his skin, even under strict surveillance in a hospital Such individuals have inborn traits or long standing habit patterns, and psychiatric treatment is not often successful

*Chapter 4*

# The Eczematous Dermatoses

THE TERM eczema (Gk. *ek*, out + *zeo*, boil) was formerly used to denote a large group of skin disorders, many of which are now designated by more specific names. There is some advantage in retaining the term, using it in a broad sense and also for designating eruptions in which a more definite diagnosis is impossible. Eczema may be considered a non infectious, inflammatory dermatosis in which the affected skin is erythematous and may also include macules, papules, vesicles, bullae, and lichenified patches, as well as edema. Since the condition is usually pruritic, excoriations, crusting and secondary infection are not uncommon sequelae. The terms "eczema" and "dermatitis" are herein used synonymously and interchangeably. Since the various eczematous eruptions constitute a large proportion of the patients seen in practice, the subject is discussed in some detail under the following headings:

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7. Pyogenic eczema
8. Eczema in the elderly
9. Autoeczematization
10. Generalized exfoliative dermatitis

## Contact Dermatitis

This disease results from an inflammatory reaction of the skin caused by contact with something in the external environment (Plates 8, 9, 10, 11).

**Etiology.** The cause may be an *allergen*, promoting trouble because the patient's skin is highly *sensitive* to it. The range of possible agents which may produce a contact reaction is extremely large. In an individual patient, however, this range contracts to a limited few, so that investigation is

practical and often successful The allergen may be in the mineral, animal, or vegetable kingdom, and usually is a chemical substance *Photosensitivity may occur from the application of certain chemicals followed by exposure to ultraviolet rays* Coal tar and sulfonamide drugs have this property. *Another possibility is a* ***primary irritant*** which is capable of eliciting a response in almost anyone's integument Strong alkalis and acids are primary *irritants* which will cause a necrotizing dermatitis when they come in contact with any skin In a similar though less drastic degree, soap may be the cause of primary irritation

The largest number of patients fall in the early age groups Most of the patients with poison ivy dermatitis are children, whereas young adults are more susceptible to contact dermatitis caused by cosmetics, occupa*tional contacts, or other* environmental experiences A dry skin is somewhat more vulnerable It is debatable whether or not deeply pigmented skin *is more resistant Hereditary factors* are apparently *of* minimal importance It is well known, however, that once the skin is sensitized to one substance *it is much more vulnerable* to other contacts making the situation more involved It should be kept in mind that patients are prone to develop *eczema of a mixed type* Contact dermatitis may be a secondary eruption complicating one of the other forms of eczema

***Symptoms.*** *The eruption begins at the point of contact with the* causative agent In most cases the eruption is seen first on an uncovered part *of the body Notation of the exact location is often important* Eruptions on the back of the hands and anterior surface of the wrists should lead to *an inquiry regarding the occupation of the individual and all contacts in* his work and during his free time at home In women the presence of a *dermatitis on the eyelids and sides of the neck frequently typifies* sensitivity to nail polish (Plate 8, B) A dermatitis beginning on the ring finger, *around the wrist,* under *a garter,* or down the middle of the back and sharply localized to one or more of these areas is almost certain to denote a sensitivity to the nickel present in metallic contacts in these sites (Plate 9, B) Sensitivity to nylon hose may result in a dermatitis on the dorsa of the feet and in the popliteal areas When the initial dermatitis is wide spread over the covered parts of the body it is most frequently caused by a dye or other component of the clothing or it may be due to soap After a variable time, the acute localized eruptions tend to spread to new areas, even without additional exposure to the causal agent, the distribution is usually symmetric and in some cases is extensive

**Varieties of Lesions.** The basic response to a contact allergen is redness of the skin (dilatation of the superficial capillaries) Loss of serum into the skin resulting in edema or in frank vesiculation or bullae is a logical development in many instances *Vesiculation is not commonly observed with dermatitis due to nail polish* nickel, dyes of various types, and other animal and mineral *material There is no hard and fast rule, and* exceptions to this are observed

The clinical picture *of sensitivity to* such plants as poison ivy poison sumac, and poison oak is one of a rapidly developing and rapidly spreading,




**Plate 8**

*Contact Dermatitis* A due to poison ivy edema and superficial vesiculation often in linear distribution accompanied by severe pruritus are characteristics B the cause is nail lacquer C hair dye is a common etiologic agent D a component in face powder is responsible




**Plate 9**

***Contact Dermatitis*** A the cause is lipstick B caused by nickel the eruption appeared at site of contact with rings metal wrist band and metal in a garter C allergic reaction to an ingredient used in tanning shoe leather D pontocaine used in local application is the cause

superficial erythematous and vesiculobullous dermatitis in which the blisters are extremely superficial and tend to run in linear formation (Plate 8 A) This tendency to spread along the lines of scratch marks is a particularly important diagnostic sign However not all plants produce florid vesicular and bullous dermatitis For instance sensitivity to ragweed is usually evidenced by erythema some edema scaling and after several weeks by lichenification (Plate 11 A)

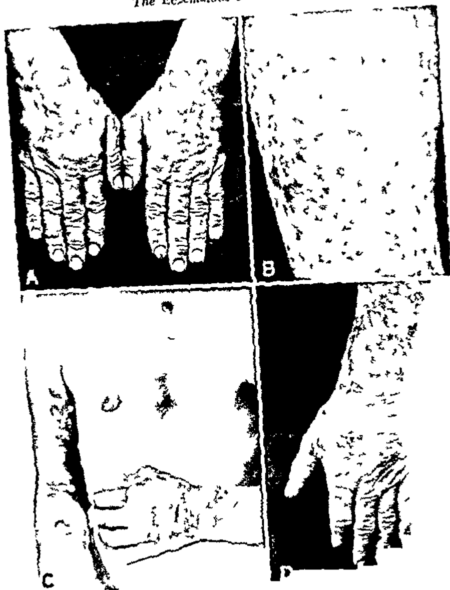



Plate 10

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**Patch Testing.** This is a method of specifically testing the patient's skin in order to determine the cause of a *contact dermatitis* Attempts to set up standard testing series utilizing a broad *spectrum of* contact sub stances similar to that used in many departments of allergy to test food sensitization etc have not proved entirely *satisfactory* It is usually more practical to limit testing only to substances suspected after careful history




**Plate 9**

*Contact Dermatitis.* A, the cause is lipstick B, caused by nickel the eruption appeared at site of contact with rings, metal wrist band, and metal in a garter C, allergic reaction to an ingredient used in tanning shoe leather D, pontocaine used in local application is the cause

superficial, erythematous and vesiculobullous dermatitis in which the blisters are extremely superficial and tend to run in linear formation (Plate 8, A). This tendency to spread along the lines of scratch marks is a particularly important diagnostic sign. However, not all plants produce florid, vesicular, and bullous dermatitis For instance, sensitivity to ragweed is usually evidenced by erythema, some edema, scaling, and after several weeks by lichenification (Plate 11, A).




Plate 11

*Contact Dermat tis* A *ragweed dermatitis* the affected skin is dry and thickened simulating neurodermatitis B reaction at s te of patch test to *ragwood oleoresin* C eruption on finger tips and pos ti e pat h test to a commerc al household wax D axillary eruption caused by a cream deodorant containing *z rcon um*

## Table I. Substances Commonly Used in Patch Testing*

| *Material* (Preparation) | *Material* (Preparation) |
|---|---|
| Aluminum chloride (2 per cent aqueous solution) | Formaldehyde (5 per cent aqueous solution) |
| Aluminum scrapings (as is) | Furniture polish (10 per cent in olive oil) |
| Ammonia (2 per cent aqueous solution) | Furs (as is) |
| Analgesics (as is) | Glue (as is) |
| Aniline dyes (2 per cent in petrolatum) | Grease solvents (as is) |
| Anthralin (0 1 per cent in petrolatum) | Hair dyes (as is) |
| Aquaphor (as is) | Hair tonics (as is) |
| Argyrol (10 per cent aqueous solution) | Inks (as is) |
| Bakelite scrapings (as is) | Kerosene (60 per cent in olive oil) |
| Benzine (60 per cent in olive oil) | Lanolin (as is) |
| Benzocaine (10 per cent in petrolatum) | Lipstick (as is) |
| Benzyl benzoate (10 per cent aqueous solution) | Lysol (1 per cent aqueous solution) |
| Boric acid ointment (as is) | Mascara (as is) |
| Boric acid powder (as is) | Menthol (1 per cent in petrolatum) |
| Burow s solution (10 per cent aqueous solution) | Merthiolate (as is) |
| Carbon paper (as is) | Moth flakes (as is) |
| Chloroform (40 per cent in olive oil) | Mouth washes (as is) |
| *Chrysarobin* (5 per cent in petrolatum) | Nail polish (as is) |
| *Cleaning fluids* (as is) | Nickel sulfate (5 per cent aqueous solution) |
| Collodion (as is) | Oil paints (50 per cent in olive oil) |
| Copper scrapings (as is) | Para aminobenzoic acid (5 per cent in petrolatum) |
| Copper sulfate (5 per cent aqueous solution) | Peanut oil (as is) |
| Cosmetics (as is) | Perfumes (as is) |
| Deodorants (as is) | Poison ivy extract (0 1 per cent in acetone) |
| Depilatories (as is) | Pyrethrum (as is) |
| Dusts (as is) | Shampoos (1 per cent aqueous solution) |
| Enamel (as is) | Shoe dyes (50 per cent in olive oil) |
| Ephedrine (1 per cent in olive oil) | Soaps (1 per cent aqueous solution) |
| Essential oils (1 per cent in alcohol) | Sulfonated oil (as is) |
| Eye lotions (as is) | Tar (10 per cent aqueous solution) |
| Flour (as is) | Tooth pastes (as is) |
| Flowers (as is) | Witch hazel (as is) |

* After Schwartz Tulipan and Peck—Occupational Diseases of the Skin

It has also been found advantageous, if it is possible, to test the patient with the exact material suspected In other words, the preferred testing material is the patient s own polish rather than a sample of nail polish purchased at the store or kept in the department for such a purpose Patch *testing is usually omitted in patients with generalized eruptions, since* a positive reaction to a test might result in a severe flare-up in the patient's dermatosis It is also important to dilute the substance sufficiently and with the proper vehicle so the testing material is not a primary irritant A list of substances frequently used in testing, with their proper dilution is given in Table 1

It also should be noted that many plants such as poison ivy are not suitable for testing purposes The object of the test is to reproduce in miniature the original eruption The undiluted or suitably diluted material is applied to the unbroken skin and left in contact for 24 to 48 hours The material is usually covered with an impervious dressing and is not disturbed unless the patient experiences intense itching or burning If this develops, the patch should be immediately removed Various areas of skin are utilized in testing If many tests are to be performed, it is usually expedient to

5 Antihistamine drugs may be given orally For a list of such drugs see Chapter 25, Dermatologic Formulary

6 X ray therapy is sometimes of value in relieving itch and has a selective action on the exudate present in the affected skin The dose should be fractional and administered only by a dermatologist Ultraviolet rays and infrared rays are usually harmful and should never be used in the treatment of eczematous eruptions due to contact allergens

7 Prevention of plant dermatitis such as that due to poison ivy consists in avoiding contact with the plant If a known contact is made, the part should be washed, using a bar of laundry soap After this the entire integument with special attention to the areas exposed to the ivy, should be sponged with rubbing alcohol Eruption on localized areas sometimes responds well to wet packs of Burow's solution (1 25), on a more extensive eruption this is not practical and treatment is similar to that of other forms of acute contact dermatitis *Zirconium* has achieved some popularity as a locally effective agent It is available in a cream (Zotox) or in a lotion (Antivy) Injections of poison ivy extract should not be given during an attack There is some question whether prophylactic injections are effective In highly susceptible patients prevention may be attempted, with three or four weekly injections given early in the spring in the hope that a certain amount of immunity will develop to carry the patient over the summer

8 After recovery or improvement the patient is advised with a few exceptions to be careful not to expose his skin to the causative agent Sometimes this means a change of occupation

9 If a commercial product is known to cause a sensitization dermatitis in an appreciable percentage of contacts, the manufacturer usually withdraws it from circulation In a similar manner workers exposed to industrial hazards are protected by many devices so that their skin does not come in contact with a chemical known to be a sensitizer The safety precautions differ with the industry but stress cleanliness of skin and clothing, good hygienic conditions in respect to ventilation, the use of fume cabinets mechanical protection such as that afforded by barrier creams, masks, gloves, aprons, etc and the substitution when possible, of a chemical less likely to cause trouble While entailing some hazard, an industrial worker with a mild reaction to a chemical with which he comes in contact sometimes loses his sensitivity if he continues at work This is known as "hardening"

## Atopic Eczema (Neurodermatitis)

(Gk *atopos* out of place)

Atopic eczema (neurodermatitis) is customarily divided into localized (Plate 12) and disseminated (Plate 13) forms The disorder is common and has a tendency to be chronic

Symptoms The disease is characterized by the *development of lichenification* The primary process may be pruritus, with lichenification secondary and due to rubbing and scratching in a patient whose skin has the

use the sides of the back, if one or a few tests are to be made, the flexor surface of the arm or forearm, or the V of the neck, the latter particularly perhaps being more suitable for eruptions of the face The results of the test may be masked to some degree by the coincidental reaction to adhesive or other material used in testing A "prophetic" patch test, devised for the purpose of screening out individuals who may be sensitive to various substances encountered in industry, is still the subject of controversy

**Pathology.** Vesicle formation may be present in the epidermis Edema increases with the severity of the process Nonspecific inflammatory reaction is present in the upper cutis

**Differential Diagnosis.** The chief difficulty in the diagnosis of contact dermatitis is differentiating it from other types of eczema Eczematous eruptions of the hand are notoriously difficult to distinguish one from another One must always keep in mind *the strong probability of a mixed etiology* ***In eruptions of the hands it is probably more common to have a mixture of atopic and contact dermatitis than to have one pure variety*** In other sites the clinical appearance and history are usually sufficient to distinguish the two conditions The length of time an eruption has been present may offer a clue Contact dermatitis is usually of recent origin whereas atopic eczema is frequently of months' or years standing Contact dermatitis of the face or scalp is sometimes confused with ***seborrheic dermatitis*** In the latter condition the eruption is less acute, and a greasy scaliness is usually present In most cases the diagnosis of contact dermatitis is readily made on the superficial character of the rash, the itching, and the presence of the rash on exposed areas of skin In approximately half the cases the cause of the dermatitis is readily determined In the rest a certain amount of detective work is required before *the responsible allergen is discovered* In some cases the cause is never ascertained

**Treatment.** 1 *All suspected allergens should be removed from* the patient's environment The use of soap should be prohibited With *considerable exudation and edema, wet dilute boric acid or Burow's* solution should be applied to the affected skin for 15 to 30 minutes several times *daily*

2 The patient should be instructed to control the impulse to scratch *Pressure on the skin sometimes gives relief* Scratching tends to spread the eruption

3 Hydrocortisone in lotion or cream is effective, both as an antipruritic and as an anti-inflammatory agent

4 If the eruption is papular, erythematous, and vesicular but not exudative, a shake lotion like neocalamine lotion, N F, may be prescribed with instructions to paint or pat it on the affected skin allow it to dry and not to be disturbed It may be reapplied at intervals If the layer of material becomes too thick some of it may be removed by mineral oil It is usually best to avoid use of ointments and greases With acute dermatitis it is also best not to use antipruritic drugs such as phenol, menthol, methylsalicylate Anesthesin, etc, which frequently irritate an already inflamed skin




Plate 13

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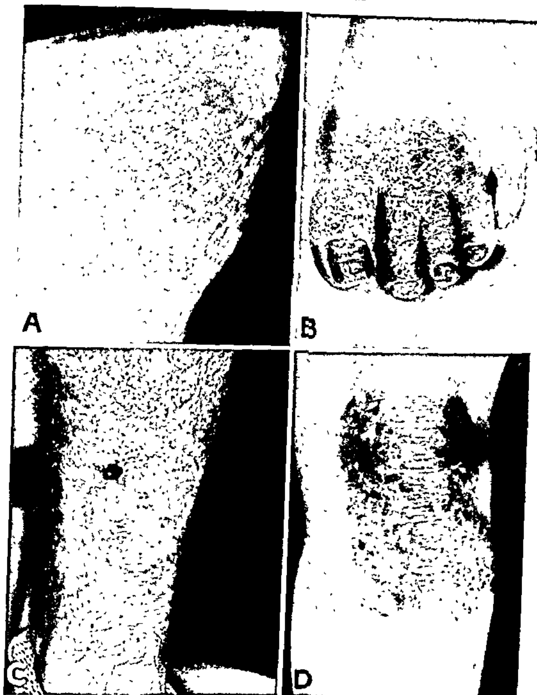



Plate 12

*Atopic Eczema (neurodermatitis) of localized type.* A, solitary plaque on inner thigh, ... skin with accentuated *skin markings is apparent B, there may be some*

ability so to react The affected skin is erythematous, dry, scaly, and thickened (lichenified).

*A localized form* may occur on any part of the body. It is often characterized by a solitary plaque (Plate 12 A), but there may be two or more. The nuchal region is a not uncommon location (*eczema nuchae*), involvement of this area being found almost exclusively in women of post-

atopic eczema than with psoriasis Also on careful examination the affected skin is noted to be lichenified The lack of other lesions of psoriasis and the occurrence of a localized plaquey eruption in middle aged women would all favor localized atopic eczema *Sometimes a biopsy is advisable in order to be certain* There is rarely any difficulty in identifying disseminated neurodermatitis The history of long duration and the presence of lichenification particularly involving the face and flexural surfaces of the arms are characteristic The only difficulty may be with *complicating secondary pyogenic infection*, which may be so extensive and excoriations so numerous as to mask the underlying process

Treatment 1 The patient should be studied carefully for a focus of infection He should also be carefully investigated psychologically Treatment with medicines or other physical agents is not sufficient if the patient is living in an unhappy environment attempting the physically impossible or not getting enough sleep The patient or a responsible member of the family should be informed that smallpox vaccination in the presence of lesions is hazardous and sometimes results in a generalized reaction known as *eczema vaccinatum* There is also similar danger from the virus of herpes simplex

2 The diet is usually unimportant It is also useless in most instances to carry out extensive skin tests

3 Soap is interdicted and a nonirritating detergent should be substituted (see Chapter 25 Dermatologic Formulary) When the skin is highly inflamed colloid baths are well tolerated and are soothing and antipruritic

4 For secondary infection either neomycin or bacitracin ointment is often useful With fever tetracycline should be administered orally in a dose of 250 mg three times daily

5 Local treatment with [illegible] come a most importa[illegible] applied sparingly on [illegible] a most all instances Because these preparations are expensive their use is often restricted to the treatment of the localized forms and for the control of acute flares of the widespread disorder Sometimes another remedy such as *tar ointment* is advisable A mixture of Zetar Vioform or Sterosan (1 to 3 per cent) in a hydrocortisone cream or lotion is preferred by many dermatologists particularly when the eruption involves the anogenital area

6 In the localized form of atopic eczema *antihistamine therapy* may not be necessary In the disseminated *form antihistamine* therapy is well established as an effective remedy *It is usually preferable to give the drug by mouth* In most instances Thephorin Trimeton or Tagathen in 25 mg doses three times daily is effective It *must* be kept in mind that 20 per cent of individuals will develop some *side reaction* to antihistamine drugs If this occurs a different drug should be substituted Sometimes as many as three or four trials are necessary *before the* best antihistamine for a given patient is determined *In* severe cases two drugs may be used

menopausal age The eruption may attack *the external auditory canal, in which site it is frequently misdiagnosed as a fungus disease.* This is the disorder usually designated as otitis externa by otologists The *perianal region* and *the genitalia* are also favorite sites Pruritus ani, pruritus scroti and pruritis vulvae are only variants When *the hands* are involved, the affected skin often becomes secondarily infected by pyogenic organisms Contact dermatitis is frequently superimposed Women in the post meno pause ages *sometimes* exhibit pruritic and less often painful, thickened plaques on the palms and occasionally on the soles This resembles psoriasis and is known as *keratoderma climactericum.*

***Disseminated neurodermatitis*** (atopic eczema) often occurs early in life (Plate 13). It may appear as *so called infantile eczema,* but, instead *of disappearing at the age of one or two, the disorder continues and may* persist until early adult life or later, with occasional periods of complete freedom There is often ***an exacerbation during the period of puberty*** and also in early adult life The eruption is similar in appearance to the local ized form, being mostly dry, scaly, and lichenified, although vesiculation sometimes occurs The ***flexural folds,*** *particularly in the cubital fossae, the* hands, face, and sides of the neck are favorite sites Sometimes widespread areas of skin are affected It *is not uncommon for **secondary infection** to follow* extensive scratching and rubbing of the skin Many patients exhibit ***hyperhidrosis of the palms and soles.*** Although generally the condition tends to improve in the summer, in some instances the condition is worse during hot weather

**Etiology.** The localized form of atopic eczema occurs most frequently in women, *particularly at or following the menopause Family and personal* history are often negative for other allergic diseases There is often a history of stress and strain Since many cases occur for the first time during the menopause, an endocrine background is suspected

In the ***disseminated form*** a personal and family history for other al *lergic disease is common* The occurrence of the disorder first in infancy points to the ***hereditary or atopic background,*** which is stressed by many observers as fundamental The exacerbation frequently seen at puberty has focused attention on a ***possible endocrine etiology*** It is well known that flare-ups or exacerbations occur after ***emotional stress and strain*** Improve ment during the summer is thought to be due to the good effect of sun light and, of course, also to freedom from worry and the healthful life which many patients lead at that time

**Pathology.** *There is* hyperkeratosis acanthosis and elongation of the rete pegs In the upper cutis the vessels are dilated, thickened and sur rounded by lymphocytes and histiocytes

**Differential Diagnosis** *When the hands are affected the localized* form may be confused with ***contact eczema*** or with ***dermatophytosis*** Oc casionally, *psoriasis* may be difficult to distinguish and this is particularly true when the condition occurs not only on the hands but on localized areas on the legs Pruritus is usually a more prominent symptom with

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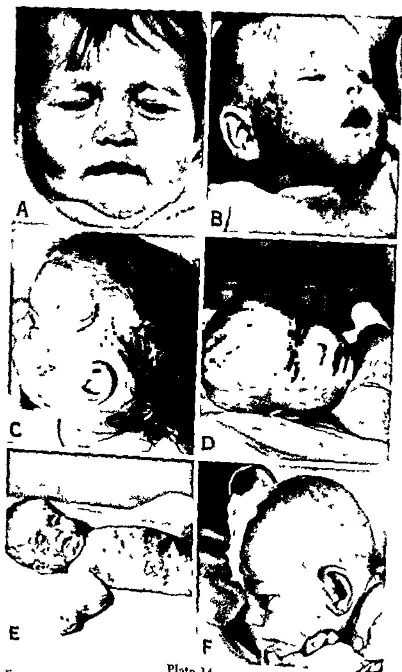



Plate 14

*Eczematous Eruptions in Infants* A and B
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concurrently If the patient is emotionally disturbed, meprobamate or reserpine may be additionally prescribed, usually in minimal dosage to start, the optimal dose of these drugs is variable

7 Ultraviolet rays are often useful *in suberythema doses, administered* once a week or oftener to the entire body

8 *X-ray therapy* is remarkably well tolerated and temporarily beneficial However, use of this modality ***should be reserved for acute exacerbations***, and it should be kept in mind that there is a strict limit to the amount of x-rays a patient may receive to any skin area during his lifetime The total dose must be carefully computed, and the treatment should be administered only by *one who is trained thoroughly in all the technical* intricacies

Patients should be followed for many weeks, perhaps for months or years

## Infantile Eczema

Eczema occurring in a newborn infant and up to the age of one or two years presents a special problem, although it is by no means a solitary disease (Plate 14) The term, infantile eczema, refers not only to the idiopathic form, which will be discussed in detail, but at times is applied to contact dermatitis, atopic dermatitis, or seborrheic dermatitis

**Symptoms.** The clinical features of the usual idiopathic case are those of an acute inflammation with erythema edema, scaliness, and often with vesicles and accompanying scratch marks secondary to the intense pruritus ***The face is particularly prone to be affected*** although the flexural areas of the arms and other parts of the body may also share in the process There *is a tendency to spontaneous recovery at age one or two* ***If the eruption persists after age two the disease is probably eczema of the atopic type,*** and the original diagnosis was incorrect ***Diaper dermatitis*** is a special form of contact eruption in infants The rash varies from a simple erythematous inguinal intertrigo to an extensive and severe inflammation involving the entire diaper area

**Etiology.** A good working hypothesis presupposes a temporary, allergic status to components in the environment Some observers stress psychic factors and parental influences As in other types of eczema, complicating *factors such as contact dermatitis, seborrheic dermatitis,* and monilia infection may change the clinical picture and pose a therapeutic problem In diaper dermatitis, irritation from the ammoniacal products present in the urine sweat retention or sensitization to soap or antiseptics used in washing the diapers are variously involved in its causation Use of rubber or plastic pants and irritating treatment may also contribute

**Differential Diagnosis** Localization of the eczema to the face, with a negative family history for allergy, tends to exclude both ***seborrheic eczema,*** in which the scalp is also involved and ***atopic eczema,*** in which the disease *is usually more* widespread and there is a history of an allergic disorder in other members of the family ***Contact dermatitis*** should be

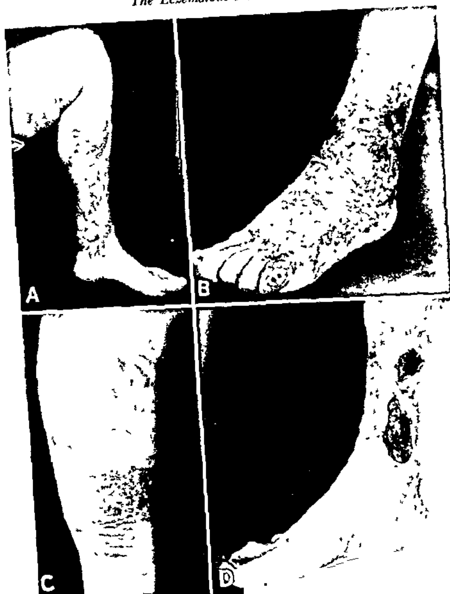



Plate 15

*Stasis dermatitis (eczema) and Stasis ulcers* A, inactive and latent status in case of long standing pigmentation and scar t...
eruption varicositie
factors C patchy e
trauma and infectio

of the ankle The tendency is to neglect the condition Although the eruption is often localized at first, the usual sequence is extension, increase in edema and bacterial invasion The eventual result is a breaking down of tissue with ulceration The longer the condition persists, the more difficult the task of bringing about complete resolution

readily recognized from the localization, negative family history for allergy, and the presence of a likely cause Sensitivity to baby oil has occasionally offered some difficulty.

Treatment Although this discussion is chiefly of the idiopathic type of infantile eczema, the following suggestions for therapy concern all forms of the disease as seen in infants

1 *Soap is usually interdicted* in all types In some instances, a soap substitute and, in others, mineral oil may be used to clean the skin

2 Hydrocortisone cream or ointment (1 per cent) is a valuable preparation If there is any secondary infection, the corticosteroid should be combined with an antibiotic such as neomycin It is always permissible to use *soothing local therapy* such as neocalamine lotion, N F, and Lassar's paste Frequently 1 per cent of a water-soluble tar in Lassar's paste is well tolerated and beneficial

3 If a contact etiology is suspected, the causative agent should be searched for and, if possible, eliminated from the environment

4 It is usually better to advise *an elimination diet* than to undertake scratch tests to find an offending food allergen In practice it is well known that *eggs, wheat, and milk are the chief offenders,* and these and other foods may be systematically eliminated for periods of at least two weeks If improvement occurs, the food should be re-introduced into the diet, exacerbation of the eruption immediately thereafter is added proof of the causative role of the food Goat's milk and soy bean milk may be substituted for cow's milk

5 If the eczema is of the seborrheic type, attention should be paid to the scalp An ointment containing 2 per cent salicylic acid and 4 per cent sulfur precipitate should be applied to the scalp once daily, left on the scalp overnight, and washed out the next morning with plain soap and water An alternative treatment is the use of Fostex cream shampoo

6 In the idiopathic type, *antihistamine therapy* should be considered In general, infants tolerate antihistamine drug therapy exceedingly well

7 Under no consideration should x ray therapy be given One should also *beware of patent remedies* and strong ointments and lotions The ultraviolet rays usually do more harm than good

8 Smallpox vaccination should be deferred until the eczema is under control, because of the possibility of a generalized *vaccinia* Patients should be kept from contact with herpes simplex virus

9 Corticotropin and corticosteroids, orally and parenterally, are contraindicated

## Stasis Dermatitis

Most eczematous eruptions affecting the legs below the knees, and [illegible] stasis or varicose derma[illegible] localized or become diffusely present over the legs The initial lesions are frequently in the region




Plate 15

*Stas s dermat t s (eczema) and Stasis ulcers* A nact e n l bt

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## Stasis Dermatitis

Most eczematous eruptions affecting the legs below the knees, and particularly around the ankles, may be classified as stasis or varicose dermatitis or eczema (Plate 15)

Symptoms. The eczematous eruption may be localized or become dif fusely present over the legs The initial lesions are frequently in the region




Plate 16

*Eczematous Dermatoses* *Nummular eczema* A there are well demarcated elevated erythematous plaques containing vesicles *B* the eruption is widely distributed *Impetiginous eczema* C the basic condition is *pyoderma* but care must be exercised not to use irritating remedies *Infectious eczematoid dermatitis* D the acute inflammation developed secondary to a discharging ear

**Etiology.** Most patients are middle-aged or older, and varicosities are either apparent or can be found readily The patients are frequently women who spend much time on their feet Policemen and store salesmen are also prone to the condition There appears to be a marked individual or familial predisposition to the development of stasis dermatitis, since not all individuals with varices develop this skin disease

**Treatment.** 1 Bathing with soap and water should be interdicted Gentle swabbing with cotton saturated in oil to remove old medicament or crusts is allowable

2 Local treatment should consist of application of soothing remedies Those much in use are wet compresses of 2 per cent boric acid solution if there is considerable exudation neocalamine lotion, N F, or ointments such as 2 per cent boric acid ointment or Lassar's paste, if the inflammation is less acute

3 *The most important phase of treatment is support of circulation and prevention of stasis* This usually is accomplished most readily by application of an elastic stocking or bandage The patient should be instructed in the proper use of these agents Most of the support must be to the lower part of the leg, with a gradual reduction of the pressure as the bandage comes up the leg The patient should also be instructed not to stand on his feet for long periods He should either sit or walk With some ingenuity most situations can be corrected, for instance, a housewife can use a stool for work in the kitchen

4 When the condition is severe and ulceration occurs, it may be necessary to place the patient in a horizontal position either at home or in a hospital In such instances, it is often advisable to consult with a surgeon as to the advisability of a stripping operation

5 A high protein diet is indicated

6 Antibiotic therapy is sometimes advisable in instances of secondary bacterial infection

7 Superficial roentgen therapy in fractional dosage is sometimes administered by the dermatologist

## Nummular (Orbicular) Eczema

Although the cause is unknown, nummular (orbicular) eczema presents a characteristic picture and should be clearly distinguished from other types (*Plate 16, A B*)

**Symptoms** The eruption consists of superficial, vesicular, erythematous patches or plaques seen characteristically on the backs of the hands and to greater or lesser degree on other parts of the extremities The patches at first are sharply defined Later, grouping of the vesicles into plaques may be less pronounced Pruritus is a prominent symptom The tendency is for new lesions to continue to develop, although in some patients the disorder is limited to only one or a few lesions

**Etiology.** The cause of nummular eczema is still undecided Several factors may be involved There is some evidence that a lack of vitamin A

## Pyogenic Eczema

A frequent complicating factor in other types of skin conditions pyogenic lesions may be predominant (Plate 16 C)

Etiology Staphylococci are chiefly responsible Systemic manifestations are rarely noted Patients in a hospital are specially susceptible

Symptoms The eczematous lesions may be frankly pustular or may be edematous and exudative There is a tendency to rapid spread Autoeczematization is common The hands are particularly vulnerable and in the past the disease has been confused with fungus infection

Treatment 1 Antibiotic therapy is indicated If fungus disease is not readily distinguished a tetracycline drug is preferable to penicillin

2 Local therapy should be bland and nonstimulating

## Eczema in the Elderly

Although elderly patients are subject to the same types of eczema as those seen in younger individuals a special variety of eczema is seen in this age group (Plate 18 A B C)

Symptoms Clinical features vary considerably with the individual The extremities are commonly affected although lesions may also appear on the trunk The lesions are erythematous scaly and sometimes vesicular and in both types the area is usually poorly defined The degree of itching varies the rash at times appearing as a complication of severe pruritus

Etiology The skin is often excessively dry and there is an intolerance to soap Most elderly people show an inclination to eat less and less protein than before Probably the etiology is mixed and includes both systemic and local factors

Treatment 1 One should not overlook the possibility of a related malignant neoplasm

2 The patient should be encouraged to eat protein particularly lean meat, but if any difficulty is encountered one of the protein hydrolysates should be prescribed

3 Soap is usually interdicted The patient should be instructed to use oatmeal baths or one of the commercial soap substitutes Morning and night the skin may be anointed with rose water ointment U S P containing 0 5 per cent menthol

4 Antihistamine therapy orally may be given a trial

## Autoeczematization

Autoeczematization refers to the spread at first locally and later to more general degree of lesions from a focus of eczema (Plate 17) It is seen more frequently in patients with acute eczema However the degree of spread is not always directly proportional to the degree of inflammation in the original lesions

Symptoms The lesions are erythematous vesicles and pustules Frequently they remain discrete and small However they may coalesce into patches The lesions are usually symmetrically distributed and frequently appear at sites remote from the original condition

is responsible to some degree, at least, for conditioning the skin toward its development A virus or bacterial infection is also possible Some observers believe that nummular eczema is a variant of neurodermatitis

*Pathology* is similar to neurodermatitis except for spongiosis and vesicle formation high up in the epidermis

*Differential Diagnosis* The condition may have to be differentiated from ***contact dermatitis;*** a negative history and an exclusion of possible contact factors, together with the sharp demarcation of the lesions, would tend to exclude this disease Because of the sharp limitation of the lesions, ***fungus infection*** is often simulated to a marked degree In tinea circinata there is a tendency for an active border, whereas in nummular eczema the lesion is similar throughout In doubtful cases a laboratory test for fungus infection is indicated

Treatment. 1. Internally the administration of aqueous vitamin A, 50,000 to 100 000 units daily for a month, may be helpful In some instances, antihistamine therapy by the internal route will relieve itching and hasten recovery

2 Well directed local therapy is almost always required In general, stimulating remedies are interdicted One of the soap substitutes may be used for cleansing the skin, and zinc oxide paste or an ointment of 2 per cent boric acid and 10 per cent zinc oxide in petrolatum may be prescribed for the initial applications Later, 1 per cent of soluble tar may *be added to either or both of these formulas*

3 Roentgen therapy, 75 r, once weekly for three or four weeks, is *often effective in causing a temporary disappearance of the lesions*

4 Recurrence is not uncommon As a prophylactic measure the skin should be kept *well lubricated during the cold months of the year*

## Infectious Eczematoid Dermatitis

Infectious eczematoid dermatitis is a complication which occasionally accompanies or follows pyogenic infection *(Plate 16, D)*

**Etiology.** The primary infection may be of various types It may be a boil, a middle ear infection, or an infected wound

**Symptoms.** The eczematous process begins adjacent to the infective focus and is evidenced by red [illegible] a few days the condition may sprea[illegible]al site Although the eruption usually [illegible] even- tually develop lesions at remote sites (autoeczematization) In rare instances the eruption becomes widespread

Treatment. 1 Intramuscular injection *of a repository type penicillin,* 300,000 units daily, or oral tetracycline, 250 mg *three times daily* is usually rapidly effective

2 Saline—boric acid compresses may be applied for *one-half hour* three times daily, followed by application of either neomycin or bacitracin ointment Care should be taken not to irritate *the already highly inflamed* skin

3 Fractional x-ray therapy is sometimes useful

## Pyogenic Eczema

A frequent complicating factor in other types of skin conditions, pyogenic lesions may be predominant (Plate 16, C)

**Etiology.** Staphylococci are chiefly responsible Systemic manifestations are rarely noted Patients in a hospital are specially susceptible

Symptoms The eczematous lesions may be frankly pustular or may be edematous and exudative There is a tendency to rapid spread Autoeczematization is common The hands are particularly vulnerable, and in the past the disease has been confused with fungus infection

Treatment 1 Antibiotic therapy is indicated If fungus disease is not readily distinguished, a tetracycline drug is preferable to penicillin

2 Local therapy should be bland and nonstimulating

## Eczema in the Elderly

Although elderly patients are subject to the same types of eczema as those seen in younger individuals, a special variety of eczema is seen in this age group (Plate 18 A B C)

Symptoms Clinical features vary considerably with the individual The extremities are commonly affected, although lesions may also appear on the trunk The lesions are erythematous, scaly and sometimes vesicular, and in both types the area is usually poorly defined The degree of itching varies the rash at times appearing as a complication of severe pruritus

*Etiology* The skin is often excessively dry, and there is an intolerance to soap Most elderly people show an inclination to eat less and less protein than before Probably the etiology is mixed and includes both systemic and local factors

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3 Fractional x ray therapy is sometimes useful













Plate 18

n lu
cc ld
*Derr*

overtreated

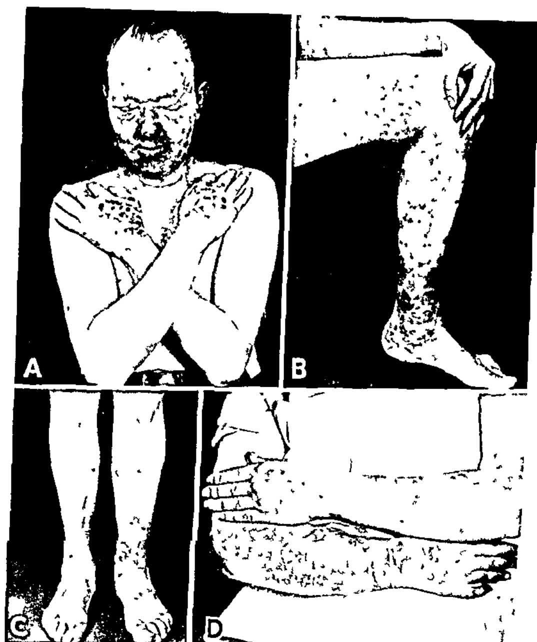



**Plate 17**

***Autoeczematization* a spreading vesicular eruption from an eczematous focus** A overtreated *nummular eczema* of face and hands with widespread lesions B and C *Stasis dermatitis* of ankle region with *secondary pyogenic infection* followed by vesicular rash of arms and legs *D* acute irritative contact dermatitis of right *forearm followed by secondary* id like lesions on left forearm

desirable to classify the rash exactly In other words, the treatment for seborrheic dermatitis is temporarily contraindicated if the patient has a contact sensitivity Instances of atopic dermatitis are frequently overlooked, particularly the localized types If a correct diagnosis is made, therapeutic procedures are usually effective, and this is a satisfactory group of diseases to treat A note of caution in regard to skin testing is in order Although theoretically conditions of the atopic dermatitis group should constitute a fertile field for scratch and intradermal testing of suspected food, inhalants etc, in practice such testing is relatively ineffectual and has been mostly abandoned In contact dermatitis the exact cause of the condition should be ascertained, if it is at all possible However, every care should be exercised to prevent harm to the patient by ill advised patch testing with substances in concentrations above the irritation level It is also often best to defer patch testing until the acute phase of the eruption has been brought under control, otherwise the rash may be exacerbated Finally it should not be overlooked that an unexplained eczematous eruption may signify an internal disorder such as diabetes, nephritis or an abdominal neoplasm

**Etiology.** The exact mechanism is not known It would appear that the patient has developed an allergy either to bacterial products, to metabolic products formed in the primary lesions, or to *some of his own cells* In any case the condition is usually spread through the medium of the lymphatics and blood vessels

**Treatment.** Care should be taken ***not to overtreat*** the original eczematous lesions or the autoeczematized lesions Patients should be urged not to scratch Neocalamine lotion, N F , is useful for local application The antihistamine drugs may be given internally to relieve itching X ray therapy is sometimes advisable

## Generalized Exfoliative Dermatitis

Generalized exfoliative dermatitis is a most distressing disorder, the *treatment of which is difficult* and the outcome not always favorable (Plate 18, D)

**Etiology.** The rash may begin ***spontaneously*** and without obvious cause but more commonly ***is secondary to psoriasis*** (or occasionally some other dermatosis) or ***follows heavy metal therapy,*** such as therapy with arsenic or gold If it is secondary to psoriasis, it may result from over treatment with chrysarobin or a comparable drug or develop without known cause This disorder may signify the presence of a lymphoblastoma

**Symptoms.** A patchy erythema gradually spreads to become *universal. Scaling becomes evident, and thickening soon develops* The skin is dry and hot Because of the loss of heat, patients complain of chilliness The nails become dystrophic and may be shed The scalp hair thins Any preceding disorder, such as psoriasis, loses its identity Itching may be prominent, particularly in the cases caused by arsenic The course is always protracted Patients with the idiopathic type are often referred to as Red Indians, in these patients the possibility of lymphoblastoma and eventual tumor formation (mycosis fungoides) or leukemia must be kept in mind Generalized lymph node enlargement is usual Secondary infection, stasis ulcers, and trophic lesions are not uncommon

**Treatment.** There are no specific remedies If no infection is present, *it is usually best not to hospitalize the patient* If secondary infection is present, antibiotic therapy is indicated Application of a vegetable grease such as Spry or Crisco is *usually well tolerated* Antihistamine drugs, orally and in full dosage are often useful in controlling the pruritus Vitamin A orally, 100,000 units or more, daily, is important Starch baths every other day will not harm the patient, but soap is contraindicated

# Summary

Although the foregoing eczematous eruptions have been described as separate entities, it should be kept in mind that ***one rarely sees an uncomplicated case*** of eczema For instance, in seborrheic dermatitis or in atopic dermatitis it is not infrequent to discover a contact element, this may be severe *enough to* mask the underlying disease In all cases it is

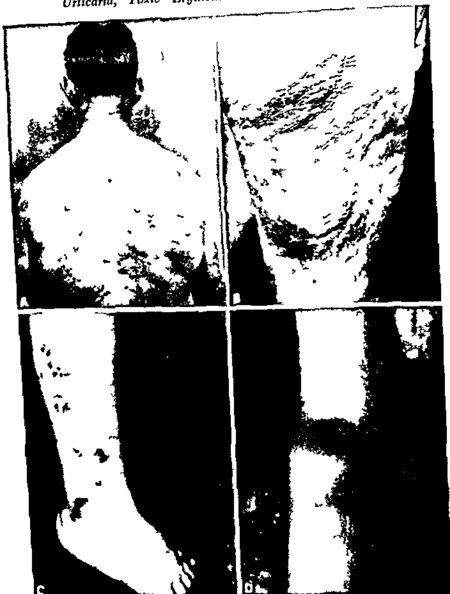


Plate 19

*Urticaria* A *acute urticaria* due to food (egg) sensitivity lesions numerous with tendency to coalescence B angioneurotic edema or giant hives C papulovesicular urticaria or lichen urticatus in a child resembling insect bites D *dermographia* or factitial urticaria induced by stroking the skin

lesions often occur on the palms and soles, and this may suggest the cause Another *important variation is seen in children* It is usual for infants and children to develop *papules and vesicles instead of wheals*, and as a further differentiation from the adult form the extensor surfaces of the extremities are usually involved *Dermographism* (Plate 19 D) is a disorder

# Urticaria, "Toxic" Erythemas, and Drug Eruptions

THE DISORDERS included in this chapter are for the most part due *to allergic reactions to ingested foods or drugs* In no other phase of dermatology is there so much variation in the clinical picture due both to individual idiosyncrasies and to the multitude of *noxious agents* which *may* at times cause an allergic reaction Changes peculiar to the individual patient may be due in part to psychic factors, to the rate of elimination through the alimentary tract, to the relative efficiency of the kidneys and liver, as well as to the total dose of the ingested material Occasionally the clinical picture of drug eruptions is typical but as a rule the diagnosis is based on a history of ingestion of a drug and the presence of a so called toxic eruption which does not fit into the picture of any other known entity ***Certain infectious diseases*** showing skin manifestations are discussed in Chapter 13 *They should always be considered in differential diagnosis,* and in this connection it is important to look for systemic symptoms and to record the temperature and the pulse

## Urticaria

(L *urtica,* a nettle)

Urticaria, or hives, is a common pruritic disorder characterized by the ***spontaneous development of wheals*** The condition is designated as acute or chronic depending on the duration Urticaria is produced by a transudate through the injured walls of arterioles and capillaries

Symptoms In the acute form a slight rise of fever may accompany the initial onset *The lesions thems*
the surface being either skin colo
which ensues The lesions develop
after minutes, hours, or days The trunk is the favored location, although lesions may appear on any part of the body In ***urticaria due to penicillin,***

side reactions The dose should be large enough to obtain the optimal effect Available drugs are discussed in Chapter 25, Dermatologic Formulary

3 *Corticotropin* and *corticosteroids* should be administered promptly for severe attacks but are not advised for chronic urticaria In acute attacks particularly when edema is diffuse or if the tongue and throat are involved these drugs are prompt in their relief and may indeed be life saving Such patients should be hospitalized anticipating the possibility of further attacks

4 Some measure of relief may be obtained by starch baths omission of soap, and application of a cold cream containing 0 5 per cent menthol

5 Patients with urticaria who do not respond to the above measures should be restudied carefully with the object of finding a focus of infection or some disease process in an internal organ One should also remember that a negative drug history even after repeated attempts should not be considered necessarily sufficient to exclude such an etiologic agent

## Erythema Multiforme

(Gk *erythema* flush L *multiformis*, of many kinds)

This disease syndrome is manifested by development of erythematous and edematous lesions of either mild or severe degree with a tendency to recurrence There are several types

Symptoms 1 *Idiopathic (Hebra type)* In this form (Plate 20) the lesions tend to appear on the face backs of the hands, and buccal mucosa (especially the lips) but may also develop on the trunk and extremities The lesions usually appear abruptly and may be accompanied by a slight rise of temperature *The lesions are always circinate and the erythema may be solid or ringlike (target or iris) and edema may be slight or sufficient to form bullae* In two to four weeks the lesions usually disappear spontaneously There is a tendency for recurrence and some patients develop lesions every spring or fall

2 *Symptomatic types (multiform erythema group)* Erythematous and edematous lesions often occurring on the trunk or on the extremities or both are a fairly constant accompaniment of certain febrile diseases *Infectious mononucleosis* and *brucellosis* are not infrequently overlooked In *rheumatic fever* the lesions are often present as non pruritic dull red, elevated circinate or arciform papules (*erythema marginatum*) The diagnosis is often considered when the lesions are somewhat atypical for other skin disorders Possibility of a drug eruption should also be considere[illegible]

may appear [illegible]

3 Steve[illegible]

stitutional s[illegible]

conjunctiva[illegible]

[illegible] lesions are usually on the genitalia and on the hands and feet The eruption is vesiculobullous in type The ocular involvement considered to be due to bacterial superinfection may result in blindness Occasionally the patient succumbs to the severe toxemia

allied to ur' ... response oc curs along ... may be con sidered a ... involves a large area of skin (Plate 19, B). For instance, the entire upper lip may be swollen The mucosae may become involved, edema of the larynx causing difficulty in breathing calls for prompt and vigorous measures In chronic urticaria the lesions may recur periodically, although usually the course is less predictable *Sometimes the lesions are present continuously over a long period* In all forms the pruritus is usually distressing and frequently interferes seriously with sleep

**Etiology.** The cause is often obscure In many instances urticaria develops because of an allergic response to an *ingested food* (Plate 19, A) The next most common *etiologic agent is a drug, either ingested or ad ministered parenterally.* The substances capable of initiating this response ... ould ... tro ... and *malignancies.* The bite of *insects, particularly fleas, may produce an urti* carial wheal

**Pathology.** Edema which at first is perivascular may involve the epidermis by flattening of the rete pegs and spongiosis

**Differential Diagnosis.** As mentioned previously, the important dis eases to differentiate are the various infectious exanthemas, such as measles or scarlet fever The history of previous infection, the age of the patient, the presence or absence of systemic symptoms, the temperature and pulse rate, as well as careful examination of the presenting eruption, are usually sufficient to indicate the correct diagnosis When in doubt the best pro cedure is to consider the infectious disease the presumptive diagnosis and to isolate the patient, the following day the correct diagnosis will no doubt be made *Actually, there is usually little difficulty in diagnosis It should* be stressed that a diagnosis of urticaria is not sufficient, and every effort *should be made to determine the etiologic agent*

**Treatment** 1 A careful history may lead to suspicion that a newly ingested food or drug is the responsible agent ***Skin testing is not often helpful,*** *in acute urticaria, particularly,* the skin is so reactive that it is difficult to differentiate between a meaningful and a factitious response After a careful survey of the patient's recent food habits, ***explicit directions should be given to the patient in regard to restriction,*** paying particular attention to fish, eggs, cheese, and other protein All the more likely causes in the diet may thus be systematically withdrawn When the history of the patient is not considered reliable, or pertinent, it is often better to place such patients ***on an empiric food elimination diet*** with instructions to ingest no drugs of any kind

2 ***Antihistamine therapy*** has deservedly come into *popular use* Most of the antihistamine drugs are at least partially helpful However in a given patient one may have to use two or more drugs before the best effect is obtained It is often necessary to change the drug because of undesirable

side reactions The dose should be large enough to obtain the optimal effect Available drugs are discussed in Chapter 25, Dermatologic Formulary

3 *Corticotropin* and *corticosteroids* should be administered promptly for severe attacks but are not advised for chronic urticaria In acute attacks, particularly when edema is diffuse or if the tongue and throat are involved, these drugs are prompt in their relief and may indeed be lifesaving Such patients should be hospitalized, anticipating the possibility of further attacks

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3 ...

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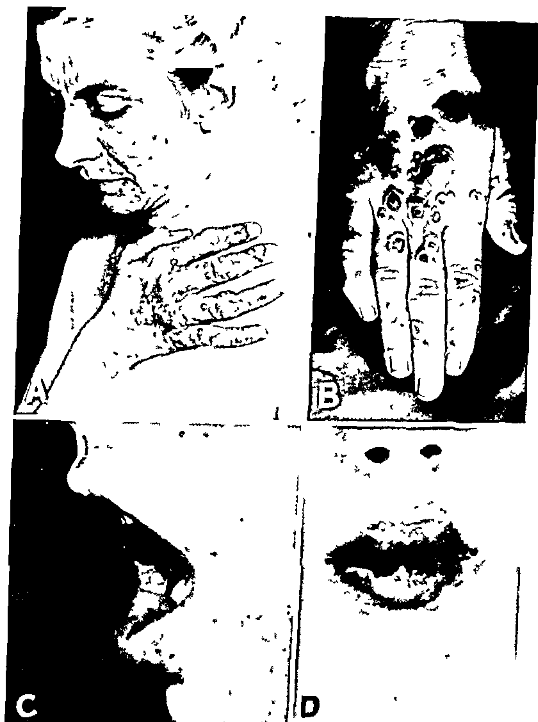



Plate 20

*Erythema Multiforme* A papulovesiculobullous lesions localized to face and hands B iris lesions are characteristic when present C target lesion on mucous membrane of cheek D crusted edematous lesions of lips

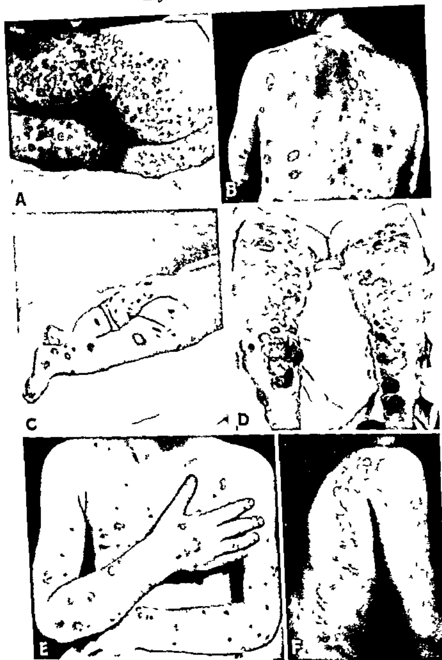



**Plate 21**

*Erythema Multiforme* the clinical appearance [illegible]
*presenting component* A, multiple erythem[illegible]
B and C similar discrete [illegible]
[illegible]
[illegible] configurate and
[illegible] areas produced by extension and coalescence of discrete lesions.




**Plate 22**

[illegible] A *erythema multiforme* in pregnancy may be evidence of [illegible]

**Etiology** The herpes simplex virus is under strong suspicion in connection with the Hebra type The cause of the eruption in the symptomatic type varies and is not always readily found The etiologic agent in the Stevens Johnson syndrome has not yet been discovered In all types the possibility should be considered of a focus of infection from which dissemination of bacteria or their products occurs

**Pathology.** There are dilated and thickened blood vessels with de

generative changes In the perivascular infiltrate are found lymphocytes polymorphonuclears and eosinophils

Treatment 1 A careful history should include detailed questioning regarding drugs

2 The patient should be given a thorough physical examination with particular attention to any possible focus of infection Pulse rate and temperature should always be recorded

3 Penicillin or a tetracycline drug should be administered if there is any possibility of a bacterial origin for the disorder particularly when constitutional symptoms are present

4 The application of menthol, 0 5 per cent, in cold cream may help to relieve the burning sensation often present

5 Starch baths are soothing and are a good substitute for the usual soap baths

6 Corticotropin and corticosteroids are occasionally helpful but should be used with caution

7 In the severe forms with constitutional symptoms and particularly if the eyes are involved the patient should be promptly hospitalized under the care of both a dermatologist and an ophthalmologist

## Erythema Nodosum

(Gk *erythema* flush L *nodus* knot)

This disease is characterized by formation of *symmetrical, nodular, erythematous painful swellings on the extensor aspect of the legs* (Plate 23 A) or less frequently on other parts of the body

Symptoms The lesions may be single but more often are multiple and are characteristically seen over the shins There is *considerable tenderness on palpation* of the lesions and sometimes spontaneous pain in the affected skin or in the neighboring joints The color is bright red and the swelling is deep the surface is usually shiny After several days or weeks the lesions begin to subside but not infrequently new lesions will then appear *A notable feature is the lack of ulceration* Most patients run a low grade fever In patients with meningococcemia the lesions are usually multiple and widespread

Etiology The cause is not always *determined* The condition may be a manifestation of streptococcal or meningococcal infection or be seen during the respiratory phase of coccidioidomycosis It *may* also be evidence of intolerance to certain drugs such as iodides or bromides Tuberculosis as a factor is sometimes suspected but is seldom proved

Pathology The essential feature is a vasculitis involving the fat Epithelioid, giant cells and foam cells appear later

Treatment 1 The patient should be carefully studied for a focus of infection If one is found suitable therapy with antibiotics or other drugs should be instituted

2 Bed rest is usually advisable elastic pressure bandages should be worn during ambulation

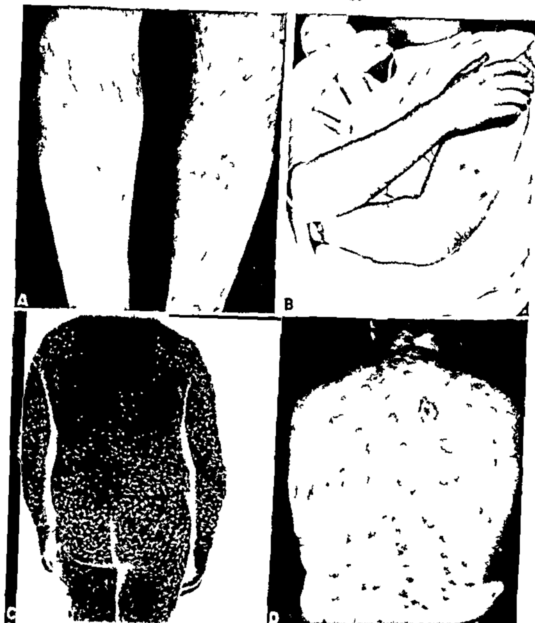



Plate 23

*Erythema Nodosum* A the characteristic location is on the extensor surfaces of the legs B painful erythematous deep seated nodules on arms *Dermatitis Medicamentosa* C *from barbiturates a fairly common occurrence* D *due to acetylsalicylic acid* Considering the large amount of drug that is taken there are remarkably few drug eruptions from this source

3 Sodium salicylate 5 grains three times daily seems to help most patients

4 Local irritation should be avoided

## Dermatitis Medicamentosa

Eruptions due to ingestion or administration of a drug (dermatitis medicamentosa) are more common than is usually recognized To an alert observer the diagnosis of an allergic drug eruption is almost an everyday

occurrence These eruptions vary tremendously in appearance, but fortunately the pattern for each drug is fairly well delineated

Symptoms The largest number of drug reactions in the skin are erythematous Most are maculopapular and occasionally are surmounted by bullae Probably the chief offenders in this type of eruption are the *barbiturates* (Plate 23 C) Acetylsalicylic acid (aspirin) is also sometimes a cause (Plate 23 D) These rashes are usually seen on the trunk Urticarial lesions may be either acute or chronic The acute form seen after injection of horse serum penicillin or procaine may be accompanied by fever and pain in the joints Very rarely an overpowering allergic respiratory response (anaphylaxis) may occur This is usually fatal In occasional instances the eruption may resemble erythema multiforme Mouth lesions often accompany the eruption the palate being the commonest site, the lesions are erythematous or telangiectatic The *halogens* (iodides and bromides) may induce a pustular eruption and both drugs are capable of causing a rash resembling acne and in the same locations (Plate 24, A, B) After prolonged ingestion vegetative lesions may develop on the legs usually over the shins The usual reaction in a patient sensitive to *procaine* is a markedly pruritic urticarial or multiform erythema (see Table 2)

**Table 2 Conjoint Sensitization to Chemically Related Compounds**

Hypersensitivity to multiple chemical substances whether administered internally or externally may indicate an allergic reaction to a component common to all The following chemicals may provoke an allergic reaction if the subject is sensitive to procaine

| | |
|---|---|
| Larocaine | Monocaine |
| Tutocain | Sulfonamide |
| Butacaine | Azo dyes |
| *Pontocaine* | Para aminobenzoic acid |
| | Para aminosalicylic acid |

The following local anesthetics may be safely used if the subject is sensitive to procaine

| | |
|---|---|
| Intracaine | Amylocaine |
| Cocaine | Piperocaine |
| Xylocaine | |

The *sulfonamides* (Plate 24 C D) may cause a variety of erythematous or eczematous eruptions occasionally the rash resembles erythema multiforme When hemorrhagic lesions occur due to a sulfonamide the patient is usually severely ill and other organs are involved in the reactive process

*Photosensitivity reactions* may occur following parenteral administration of sulfonamides, barbiturates and certain dyes, and subsequent exposure to sunlight

Penicillin deservedly has a good name for being relatively harmless in comparison with the potential possessed by the sulfonamides for damage to important organs The usual *cutaneous reaction to penicillin is urticarial* (Plate 25 A) and appears one to three weeks after the drug is first administered or shortly after subsequent injections There appears to be a predilection for the palms and soles, which may help to distinguish it from ordinary urticaria Quiescent foci of fungus disease may become activated and occasionally vesicular lesions particularly on the hands and



Plate 24

*Dermatitis medicamentosa* A *bromoderma* there is often a close resemblance to acne vulgaris B *iododerma* widespread vesiculopustular eruption treatment with sodium chloride displaces the halogen and assists in its elimination C sulfonamide eruptions develop rapidly and are usually edematous D *stomatitis medicamentosa* due to sulfonamide

feet, are produced Generalized exfoliative dermatitis is an uncommon though serious complication of penicillin therapy

*Purpuric lesions* may be due to iodides, barbiturates, sulfonamide drugs, or arsenic *Arsenic produces many different skin reactions* However since arsenic is now administered much less frequently a severe skin reaction leading occasionally to generalized exfoliative dermatitis may soon be only a memory Keratoses of the palms and soles may appear many years after administration or ingestion of arsenic (Plate 25, C) The long con




**Plate 25**

*Dermatitis Medicamentosa* A flare of fungus infection of feet due to penicillin the more common reaction is urticarial B arsenical keratoses from ingestion of Fowler's solution 20 years previously C arsenic ingested *many* years before is responsible for the widespread pigmentation and keratotic growths D acute eczematous reaction to an oral tetracycline drug in patient previously sensitized from its local *application*

tinued administration of a silver salt in nose drops or in other medications results in its deposition in the skin producing after a time a peculiar metallic sheen (discussed more in detail in Chapter 15)

*Fixed eruptions due to drugs recur in exactly the same location on readministration of the particular drug* (Plate 26 B) The chief causes of fixed eruptions ... arsenic ... barbiturates gold, and are ...

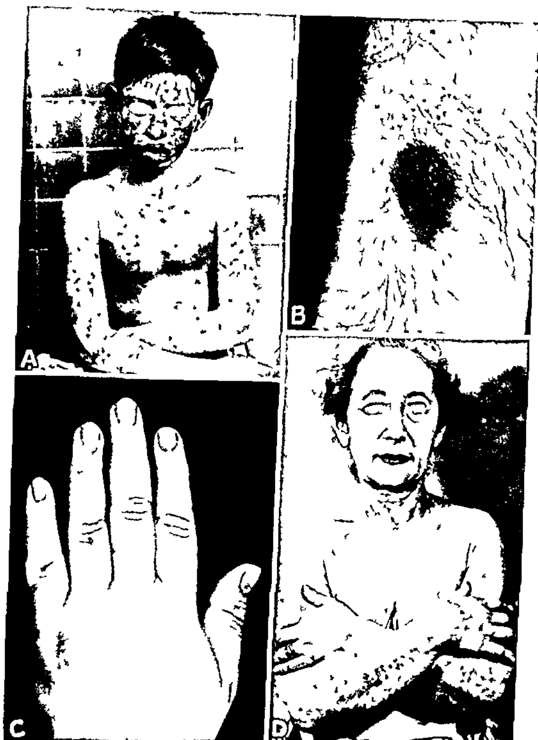



**Plate 26**

*Dermatitis Medicamentosa* A severe *erythema multiforme like response to Dilantin* B fixed eruption caused by antipyrine C phenolphthalein taken as a laxative is responsible D generalized intensely pruritic plaquey lichenoid response to administration of gold in the treatment of arthritis

and usually erythematous and pigmented giving them an over all purplish appearance

*Atabrine* administered widely to the troops during World War II in prophylaxis against malaria was responsible for a lichen planus like eruption thought at first to be an atypical form of that disease

It should be remembered that it is not uncommon for *other organs of the body to be coincidentally involved*, the most important usually being the blood and blood forming organs. However inflammatory changes may also occur in the kidneys liver gastrointestinal tract and central nervous system

Diagnosis The possibility of a drug eruption should always be considered when atypical lesions are observed Careful inquiry as to use of drugs should always be routine in taking a dermatologic history *There is no satisfactory laboratory or skin test for sensitivity to drugs* If a drug is s spected ... iter the drug may again be ... nount to a positive skin test ... dministration of drugs in a patient suspected of being sensitive to them since a very strong reaction may result from their readministration

Prophylaxis 1 A caref ... fo ...

b

drug should be discontinued

3 Chief danger of life threatening anaphylactoid reactions is from injection of horse serum penicillin and procaine

Treatment 1 In all cases of drug sensitivity the blood and urine ... most

... tions with serum sickness-like symptoms emergency measures ... tion of epi ...

3 In ... of the antihistamine drugs may be administered The dose required is usually somewhat in excess of that effective in urticaria If prompt relief is not obtained from the first antihistamine drug tried another should immediately be substituted Occasionally the best results are obtained when two or more drugs are coincidentally given to the patient (see Chapter 25)

4 ...

are use ...

essenti ...

5

the dru ... danger from an injection of procaine should be explained

6 Sodium chloride may be administered in tablets or by infusion for a halogen dermatitis iodized salt is not suitable for this purpose

7 There is no known therapy for silver deposits in the skin

8 Fixed drug eruptions are unresponsive to most medications but




Plate 26

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*Chapter 6*

# The So-Called Collagen Diseases

A DEFINITE structural relationship is known to exist between the various diseases to be discussed in this chapter There is some evidence that they may also have etiologic factors in common Electron microscopy of collagen fibers in several collagen diseases has shown a normal morphology These may very well be diseases of the *ground substance.* This latter is a mixture of mucopolysaccharides lodged in gel form in the interstices between the collagen It is an astonishingly versatile substance, acting as a transport for certain materials and as a barrier to others Further investigation and advancement of knowledge may alter our present conception of these disorders

## Lupus Erythematosus

(L *lupus,* wolf)

There are two syndromes for both of which the term lupus erythematosus is used These are (1) discoid lupus erythematosus, and (2) systemic lupus erythematosus The former is the more common and while often resistant to treatment offers little threat to life The latter is a serious disease and the skin manifestations are *only* part of the disease process that profoundly affects collagenous tissue in all parts of the body Occasionally the discoid form changes over into the acute form and because of this, as well as for other reasons the two diseases are considered to be closely associated

### Discoid Lupus Erythematosus

This is a chronic disease usually affecting the face (Plate 27)

Symptoms In a typical case the les [illegible]

*and spread over* [illegible]

to see lesions ov [illegible]

lips and even affecting the buccal mucosa While typically localized to one region lesions occasionally become disseminated (Plate 28, A) and appear scattered over the trunk and elsewhere on the body The lesions

since there is usually little or no discomfort the main purpose is to make a correct diagnosis and stop the drug

9 When purpuric lesions are predominant, vitamin C is indicated

10 Nonspecific therapy for drug eruptions in general consists of intramuscular administration of crude liver extract, 5 cc twice a week

11 Under current investigation for penicillin reactions is penicillinase (Neutrapen), an enzyme reputed to destroy penicillin A single dose of one vial (800,000 units) is given intramuscularly Severe local pain and other untoward effects have been noted A substitute antibiotic should be administered

are *brightly erythematous* Follicular plugging occurs and *adherent scales* may be observed under careful scrutiny When the scale is dislodged small conical projections will be noted on the under surface of the scale, *dilated follicles* may then be seen Noticeable *atrophy and depigmentation* follow involution of the lesions in almost every instance Exceptionally the process may be superficial enough that atrophy does not occur Telangiectasia may develop early or late

Etiology The disease *may be precipitated by exposure to ultraviolet rays*, the first attack often follows acute sunburn Many consider foci of infection important in the background Tuberculosis is mentioned by English authors but it is not believed to be a common factor in this country

Pathology There is hyperkeratosis and follicular plugging The epidermis is usually atrophic and the basal margin is disrupted by the underlying inflammation Basophilic degeneration and clumping and fragmentation of the elastic tissue in the upper cutis is characteristic

Differential Diagnosis The condition may be confused with the systemic variety of lupus erythematosus with polymorphic light eruption (Chapter 19) with seborrheic dermatitis with psoriasis, and *occasionally* with lupus vulgaris The chief difficulty occurs at the onset when only one or a few lesions are present and not all the diagnostic features occur

Treatment 1 The patient should be examined for *foci of infection* and these corrected when possible One should be certain that the diagnosis is correct particularly that it is the discoid type and not the subacute variety A careful physical examination should be *performed including urinalysis* and *complete blood count*

2 The patient should be warned against exposure to sunlight even when the disease is apparently cured Under no consideration *should ultraviolet rays* be used in treatment

3 There is currently a choice of drugs which are effective The majority of patients are treated by oral administration of either quinacrine hydrochloride (Atabrine dihydrochloride) or chloroquine phosphate (Aralen phosphate) Although Atabrine is the more rapidly effective drug it has the disadvantage of producing a yellowish tint to the skin (*resembling icterus*) when the dosage is sufficient to cause *involution* of the lesions (100 mg twice daily is usually required) Aralen (250 *mg two or three* times daily) does not have this disadvantage but is somewhat less effective requiring more prolonged administration With both drugs gastric irritation is not uncommon but may often be prevented if the drug is taken after meals (See also *Dermatitis medicamentosa due to* Atabrine ) Other antimalarials also used include *Camoquin*, 200 mg twice daily *Plaquenil*, 200 mg twice daily or a combination of drugs known as *Tri-quin* Heavy metal therapy including bismuth subsalicylate administered intramuscularly (1 cc once weekly) Bistrimate orally (75 *mg* three times daily) and gold sodium thiosulfate intravenously (10 mg up to 50 mg once a week) are available for the treatment of selected cases With all remedies the patient should be carefully watched for the development of reactions With gold

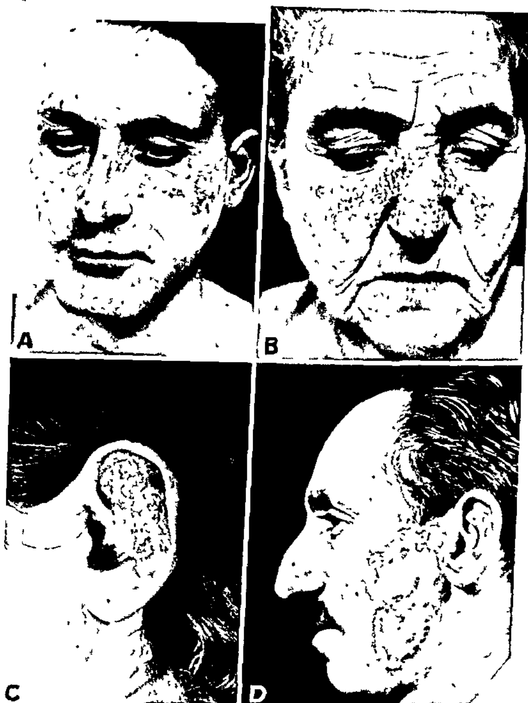



Plate 27

***Discoid Lupus Erythematosus*** A in a typical location tendency to relapse and often difficult to cure but no threat to life B classic appearance in the butterfly area of the face C, lesions are limited to the ear, a not uncommon site D, depigmentation and atrophy are the usual sequelae

are *brightly erythematous* Follicular plugging occurs and *adherent scales* may be observed under careful scrutiny When the scale is dislodged small conical projections will be noted on the under surface of the scale *dilated follicles* may then be seen Noticeable *atrophy and depigmentation* follow involution of the lesions in almost every instance Exceptionally the process may be superficial enough that atrophy does not occur Telangiectasia may develop early or late

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Plate 28

*Lupus Erythematosus* A disseminated lesions of discoid lup is erythematosus B per manent alopecia due to atrophy following invol tion of discoid lesions C trans tion from *discoid to systemic form following s nburn*

the advent of pruritus or of a skin eruption is the signal for cessation of treatment A urinalysis should be performed at regular intervals A periodic blood count (every two or three weeks) is also advisable particularly when gold is administered since aplastic anemia is a rare toxic reaction

4 Intramuscular injections of *crude liver extract* (5 cc ) and of

tocopherol (200 mg) may supplement other measures *The tocopherols* may also be given by mouth (100 mg three times daily)

5 If other areas have responded to the measures noted above, small resistant lesions of lupus erythematosus may be treated with *solid carbon dioxide*

## Systemic Lupus Erythematosus

In this form of lupus erythematosus the manifestations in the skin are only part of the involvement of collagenous tissue in many parts of the body (Plate 29)

Symptoms The skin eruption may resemble the chronic discoid form with erythematous lesions on the face but the backs of the fingers and other parts of the body are also often involved The rash usually takes the form of a *superficial, bright red transient macular eruption*, scaling is absent and the lesions fade out without leaving any atrophy Later the eruption may become more fixed Relapse and remission of the skin lesions at intervals of a few days to a few weeks is the usual course Occasionally the lesions have the appearance of urticaria or erythema multiforme Hemorrhagic or purpuric lesions may appear particularly late in the course

There *is progressive loss of weight*, with lassitude and associated anemia Fever at first is slight but later may spike to high limits *Pain in the joints* and *pleuritis* are common The *Libman Sachs syndrome* is a form of this disorder in which the heart valves are involved in a nonbacterial endocarditis Examination of the urine usually shows the presence of albumin and red blood cells *Leukopenia is almost always constant* The *sedimentation rate becomes progressively elevated,* and there *is an increase of globulin in the blood serum* The disease may be considered to be almost invariably fatal *Demonstration of the L E cell in bone marrow* and of the L E phenomenon in peripheral blood are specific tests and are often helpful in confirming the diagnosis The serologic test for *syphilis (STS)* often shows a false positive reaction

Etiology The cause is unknown Most of the patients are young women

Pathology The essential change is a degenerative vasculitis especially of the internal organs The skin changes are more acute than in the discoid form

Prognosis There is a tendency to *remissions* and exacerbations over months or years The ultimate prognosis is poor Involvement of the kidneys is a serious development

**Treatment** Patients with this disorder should be hospitalized at least for preliminary survey and examination The most oft [illegible]

from me [illegible]

ministrat [illegible]

[illegible] testosterone, and Atabrine




Plate 29

*Systemic Lupus Erythematosus* A, the onset is often insidious collagenous tissue in many parts of the body may also be affected B the skin lesions are often transitory and erythematous, and may or may not be scaly C in this acute form the skin lesions are more pronounced and mucous membranes are involved death occurred within a few weeks

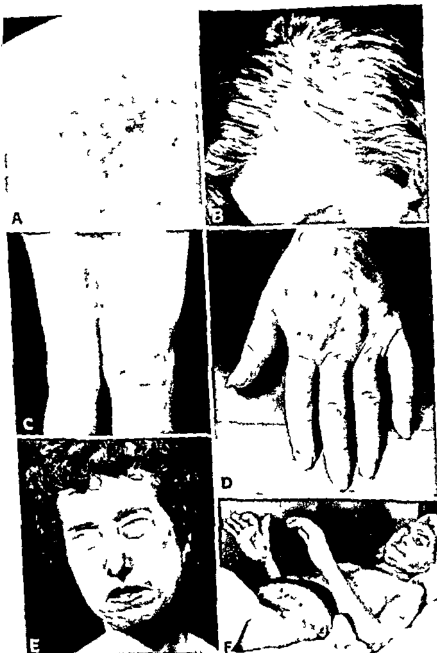



Plate 30

invol ing other tissues.

## Scleroderma

(Gk *skleros,* hard + *derma,* skin)

There are three clinical variants of scleroderma, *in each of which there* is a hidebound skin that is immovable from the underlying tissues

**Symptoms.** In the circumscribed variety, including *morphea* (Plate 30, A), there is a localized slowly enlarging plaque in which the skin is firm and bound down to the underlying tissue It is commonly seen on the trunk, in the form of an oval-shaped area often with a violaceous zone surrounding it In linear scleroderma there is a band like sclerosis limited to one area (Plate 30, B)

**Acrosclerosis** is usually seen in girls during adolescence or in women The face, hands, and arms are chiefly affected In addition to hidebound skin, there are also symptoms of Raynaud's disease, such as blanching of the fingers and ulcerations Systemic involvement may occur

In the third variety, known as ***progressive scleroderma,*** the disease tends to extend *to widespread areas of skin The disability gradually in*creases in severity, the face, arms, and hands (***sclerodactylia***) being particularly involved Deposits of calcium in the skin may occur Atrophy and resorption of bone, particularly of the hands is frequent in advanced cases Esophageal stricture may occur The lungs may become fibrosed The course is downhill, and after months or years the patient may become completely incapacitated

**Etiology.** The cause is unknown There is an alteration in the calcium/phosphorus metabolism, with a tendency to retention of calcium Women are affected three times more frequently than men

**Pathology.** In early scleroderma there is edema of the cutis Later *the collagen is sclerotic and closely packed The vessels become narrowed* and are frequently obliterated

**Prognosis** The prognosis is much better in morphea than in the other forms Spontaneous recovery is often seen in morphea Linear scleroderma usually remains stationary *In* acrosclerosis and in progressive scleroderma one cannot be certain that treatment will have any effect

**Treatment.** For morphea the treatment consists in daily massage and in the ingestion of large doses of vitamin B complex Sympathectomy has been undertaken with partial success for relief of symptoms in acrosclerosis In treatment of the progressive type of scleroderma *the antihistamines at* times have had some effect on the course of the disease Benadryl has been most extensively *used, although the other antihistamines* are probably equally efficacious Thyroid extract in small doses and ditachysterol, 15 drops three times daily, may be prescribed The corticosteroids are not effective Avoidance of cold is important Physiotherapy may be helpful

## *Scleredema Adultorum*

(Gk *skleros,* hard + *oidema,* swelling)

Scleredema adultorum *is a disorder superficially* resembling scleroderma

Symptoms The disease consists of plaques and diffuse areas of solid edema affecting particularly the face neck and upper trunk The affected skin becomes hard and the normal skin markings are obliterated

Etiology There is usually a history of an acute febrile disorder just prior to the onset Women are more often affected than men

Differential Diagnosis This disease rarely attacks the feet or hands and develops more rapidly than most cases of scleroderma

Treatment The condition undergoes spontaneous resolution often requiring a year or more The antihistamine drugs may be given a trial

## Dermatomyositis

As the name implies dermatomyositis affects both the skin and the skeletal muscles Both a chronic and an acute form are recognized

Symptoms *In the chronic variety,* one of the early findings is *edema of the upper eyelids* (Plate 31 A) A *variety of skin eruptions* not uncommonly appear including lesions of lupus erythematosus and occasionally also of poikiloderma Occasionally edema may be widespread and lesions of erythema multiforme or erythema nodosum may occur Sclerodermatous plaques are sometimes noted *An early symptom is weakness,* which may be general or confined to certain groups of muscles Most patients also complain of *tenderness of the muscles and occasionally of pain* The muscles in the shoulder girdle are particularly prone to be affected Palpation discloses tenderness in the affected muscles and gives the sensation of a doughy mass with loss of substance

*In the acute form* the disease runs a febrile course and the patient may rapidly deteriorate Enlargement of lymph nodes and of the *spleen* as well as rheumatic symptoms may occur The *sedimentation rate* is usually elevated

Etiology The cause is not known There is an associated *internal malignancy* in an appreciable percentage of adult patients

Differential Diagnosis The clinical picture may vary so much *in the* individual patient that it may resemble that of *lupus erythematosus, scleroderma* or *trichinosis* as well as *myasthenia gravis*

Prognosis In the acute form the mortality is approximately 50 per cent In the chronic form the disease progresses for several months after which a stationary period is followed by clinical remission At least some muscle weakness is usually permanent

Treatment In the acute form ACTH or cortisone may be given Large doses of antihistamine drugs and tocopherols offer the best hope of aborting an attack Bed rest is usually required A high protein diet is indicated Androgen therapy occasionally helps If the physical findings do not disclose an internal malignancy a pelvic examination under a general anesthetic or an exploratory laparotomy may be advised

## Periarteritis Nodosa

Periarteritis nodosa is centered in the arterioles and smaller arteries and often affects multiple organs




Plate 31

*Dermatomyositis* A Facial edema particularly involving the eyelids is a frequent early sign B muscle wasting bilaterally is apparent C loss of weight and weakness are exaggerated D an erythematous scaly eruption often simulating lupus erythematosus is common

Symptoms The symptoms vary considerably, depending on the organs affected and the extent of the involvement In the skin, lesions may be manifested by *localized painful nodules*, single or multiple, which often become necrotic The nodule may pulsate and is often surrounded by a patterned dilatation of capillaries In addition, purpura, urticaria, and erythema multiforme may develop There is irregular fever, weakness, and joint pain Eosinophilia is fairly constant The sedimentation rate is elevated The disease often terminates fatally

Etiology There is some evidence that the disorder is a manifestation of allergy Males are affected four times as frequently as females

Pathology. Small and large arteries are involved by degenerative necrosis Inflammation is perivascular and consists of polymorphonuclear leukocytes, eosinophiles, lymphocytes and plasma cells

Treatment Corticosteroid therapy should be given a trial

## Panniculitis

Panniculitis, or Weber Christian disease, is a relapsing, febrile, nodular, nonsuppurative inflammation of the subcutaneous tissue It is included here as a matter of convenience rather than because it has any features in common with the other disorders discussed in this chapter

Symptoms Nodules and plaques develop in successive crops in the subcutaneous tissue, accompanied by fever, nausea and muscular pain The thighs are particularly vulnerable, but lesions may occur on other parts of the extremities or trunk At times, no fever occurs The lesions eventually resolve, leaving atrophy

Pathology There is acute inflammation resulting in fat necrosis, foreign body and lipophage (foam cell) reaction *Vasculitis is a constant finding*

Treatment The corticosteroids have been used with equivocal results

## Nodular Vasculitis

An ill defined disorder of the legs closely allied to erythema induratum

Symptoms Most patients are adult women Erythematous nodules and plaques, often tender develop on the legs These may slowly enlarge and sometimes ulcerate Spontaneous resolution is unusual

Etiology The histology is similar to erythema induratum Other evidence of vascular disease may be present

Differential Diagnosis This is often by *exclusion* Lack of evidence of tuberculosis elsewhere negative history for drugs, absence of varices and histologic findings are helpful

Treatment Determine if there are other vascular lesions Local support is necessary in all cases

# The Chronic Vesiculobullous Disorders

BULLAE or blisters are not uncommonly seen in contact dermatitides due to poison ivy, to overexposure to sun, and to many other sensitizations to plants, chemicals, etc. Sometimes, also, blisters and vesicles are an evidence of drug sensitivity, they may also appear in certain infections, as for instance dermatophytosis In all these conditions duration of the eruption is relatively short, the reaction in the skin acute, the disorders are important and are discussed in detail elsewhere Excluding this group, there still remains a problem in the diagnosis and management of patients with ***long-standing or recurrent vesiculobullous lesions.*** In most instances the

**Table 3. Differential Diagnosis of Chronic Vesiculobullous Diseases**

| | *Pemphigus Vulgaris* | *Dermatitis Herpetiformis* | *Erythema Multiforme Bullosum* | *Epidermolysis Bullosa* |
|---|---|---|---|---|
| Age | 50+ | adults | 20–40 | infancy |
| Lesions | normal skin at periphery | erythema at base | iris | bullae on trauma sites |
| Sites | abdomen, scalp, groin mouth | scapulae, trunk, sacrum | eyes, mouth, extremities | hands, elbows, knees |
| Grouping | 0 | ++++ | + | + |
| Weight loss | marked | none | none | none |
| Duration | one year or more | several years untreated | 6 weeks | life |
| Pruritus | 0 | ++++ | 0 | 0 |
| Fever | 0 | 0 | ++ | 0 |
| Pain (oral) | ++++ | 0 | + | 0 |

disease will be found to be one of four namely (1) *dermatitis herpetiformis*, (2) *pemphigus vulgaris* (3) *erythema multiforme*, or (4) *epidermolysis bullosa* (Table 3) The clinical features of dermatitis herpetiformis and pemphigus are considered in this chapter erythema multiforme is discussed in Chapter 5 epidermolysis bullosa in Chapter 16

## Dermatitis Herpetiformis

(Gk *herpo* I creep + L *forma* appearance)

According to Norman Walker dermatitis herpetiformis or Duhring's disease, is the disorder that plagued Job It is a chronic markedly pruritic noncontagious skin disease (Plate 32)

Symptoms The lesions are more typically vesicular than bullous, although bullae often form The disorder is chronic The *lesions tend to be grouped symmetrically* and are observed on the trunk and extremities *The sites of predilection are the extensor surfaces of the extremities, the scap-* [illegible] of dermatitis herpetiformis Untreated the disease may persist for months or even years The general health is not affected Eosinophilia is common *There is a* probable variant known as *herpes gestationis* (Plate 32 B) in which the lesions appear during the later months of pregnancy and usually disappear spontaneously with delivery The clinical features are identical with those named above

Etiology The cause is unknown although a viral agent *is* suspected Endocrinologic factors at times appear important particularly in cases of herpes gestationis

Pathology The vesicle formation is usually subepidermal and the vesicle as well as the surrounding perivascular inflammatory *reaction* contains numerous eosinophils

Differential Diagnosis In a typical case in which lesions are grouped the itching is intense the disease has been present for months or years without any effect on the general health and atrophy or scarring and pigmentation are noted the diagnosis of dermatitis herpetiformis is assured It is well known however that the disease is not always so typical The chief disease to differentiate is pemphigus vulgaris (infra) In the latter disease the tendency is more to form larger lesions (bullae) the itching is not so pronounced the localization of the lesions is less typical and the general health is affected after several months

It should be kept in mind that eruptions simulating dermatitis herpetiformis may occur with internal malignancy

Treatment 1 In many cases the eruption will disappear almost dramatically after administration of sulfapyridine (Plate 32 A) unfortunately the drug tends to suppress and not to cure the disease Although sulfapyridine is generally considered one of the more toxic of the sulfonamide drugs the other members of the group are not nearly so effective

*Chapter 7*

# The Chronic Vesiculobullous Disorders

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| Grouping | 0 | ++++ | + | + |
| Weight loss | marked | none | none | none |
| Duration | one year or more | several years untreated | 6 weeks | life |
| Pruritus | 0 | ++++ | 0 | 0 |
| Fever | 0 | 0 | ++ | 0 |
| Pain (oral) | ++++ | 0 | + | 0 |

A soluble sulfonamide (Gantrisin) may be used however if sulfapyridine is not tolerated The effective dose of these drugs is variable It is customary to start with 0 5 gm three times daily gradually increasing until a favorable effect is obtained Periodic examination of urine and blood is required when any sulfonamide drug is administered

2 Promacetin, 0 5 gm 5 or 6 times daily has also been found effective

3 The antihistamine drugs are occasionally effective Drug trials are often necessary using different antihistamines in succession until one is found that seems superior to the others

4 Arsenic (Fowler s solution) an older remedy is still useful in some instances

5 Some measure of relief may be obtained by local application of an antipruritic medication Sometimes colloid baths are soothing It is also considered advisable to search for a focus of infection (teeth tonsils prostate etc ) although in practice little help may be expected

Nicotinic acid 50 to 100 mg 3 times daily, has been advised

## Pemphigus

(Gk pemphix a blister)

This is an essentially bullous skin disorder with an acute or more frequently chronic course accompanied by systemic symptoms and usually with a fatal prognosis

Symptoms 1 *Pemphigus vulgaris* (Plate 33) This is the usual manifestation of the disease The onset is often insidious The first lesions may occur in any part of the body or even on the mucous membranes There *is some tendency to localize in the intertriginous areas of the body*, as on the axillae, groin, or umbilicus but lesions on the scalp are also considered fairly significant If untreated there is an offensive characteristic odor After a variable period the eruption becomes more or less generalized and roughly symmetric Itching is a variable symptom Patients begin to *lose weight early* in the course of the disease Appetite is lost and anemia often is quite severe and may be observed early *The bullae characteristically arise from normal skin*, although a zone of erythema may surround them The disease may be confined to an area such as the mouth for many months The bullous lesions tend to be tense, and contain serum which may at times become hemorrhagic or purulent. Their rupture leaves a raw exuding surface which then becomes crusted When the crusts are shed pigmentation remains for many weeks or months The *Nikolsky sign* is usually positive To elicit this sign the pad of the thumb or finger should be pressed firmly on the patient s apparently normal skin Movement while pressure is maintained causes the superficial part of the skin to become detached from the bottom portion leaving a denuded area Another method is to gently stroke a limited area of skin with the fingerpad Subsequent observation will reveal formation of a blister in the traumatized site

2 *Pemphigus foliaceus* In this variety the lesions begin as flaccid bullae which rupture readily followed by formation of additional bullae

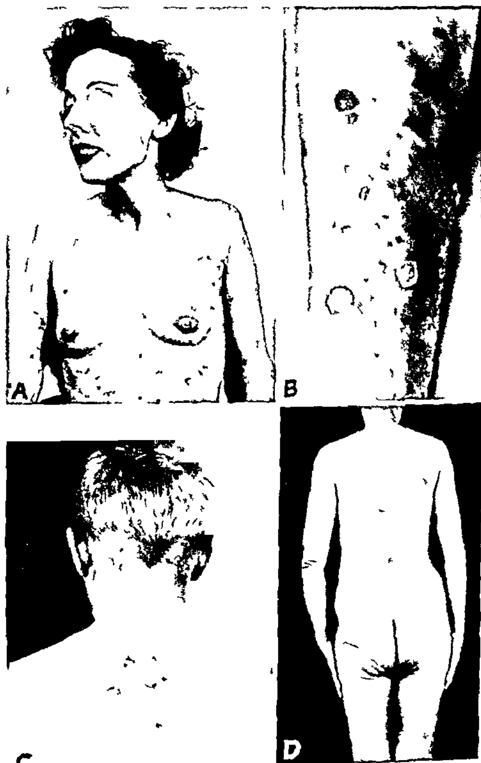



Plate 32

*Dermatitis Herpetiformis* A a severely pruritic grouped vesicular eruption widely ... tion cured by sulfapyridine B *herpes gestationis* a

Secondary pyogenic infection usually enters the picture. When the patient is observed the chief feature is often the presence of flaky crusting

3 *Pemphigus vegetans* (Plate 34 D) The initial lesions are bullous but these soon rupture and vegetative plaques appear The surface of the affected skin is moist As in the other two varieties there is an offensive odor. The lesions tend to localize in the axillae and inguinal regions and genitalia Bullae may also appear on the buccal mucosa

4 *Pemphigus erythematosus* In this nondescript variety the lesions are often difficult to distinguish from lupus erythematosus and seborrheic dermatitis with lesions present on the scalp face and often on the upper part of the trunk. In many instances however patients after several months develop true pemphigus vulgaris (Plate 34 B)

5 *Acute or Butcher's Pemphigus* The onset is sudden severe constitutional symptoms accompany the bullous rash suggesting an infection Most of the patients have had contact with dead animals being butchers trappers etc The disease is usually fatal within a few days to a few weeks

6 *Famil*

disease recu

the sides of

Often other instances occur in the family The general health is unaffected The consensus is that this is not a form of pemphigus

Etiology Unknown A bacterial or viral etiology has been suspected but is not yet proved No age is exempt patients are usually adults of middle age and are often of Semitic origin Metabolic and psychogenic factors are mentioned but most observers believe they are the result of the disease

Pathology The important diagnostic feature is the intraepidermal vesicle formation There is usually a distinct cleavage between the basal cells and prickle cells The vesicles contain acantholytic (Tzanck) cells which are isolated epidermal cells which have lost all signs of prickles

Differential Diagnosis The points of differential diagnosis from dermatitis herpetiformis have already been mentioned In children there is a form of *bullous impetigo* referred to as pemphigus neonatorum which is a misnomer At times *erythema multiforme* and *drug eruptions* may be confused Eventually the development of systemic symptoms will point up the correct diagnosis A positive Nikolsky sign is helpful but not entirely pathognomonic since it may be elicited in some other bullous diseases *In pemphigus foliaceus one may confuse dermatitis exfoliativa Pemphigus vegetans may sometimes have the appearance of blastomycosis or of an iodide or a bromide eruption* Blastomycosis may be distinguished by lack of a border showing minute pustules and of course by a laboratory test for the Blastomyces The vegetating forms of a halogen dermatitis usually localize in the pretibial region rather than in the intertriginous areas of the body Questioning usually elicits the history of ingestion of the drug *It is not uncommon to see patients in whom the diagnosis of pemphigus limited to the mucous membranes has not even been considered* The lack of local response to therapy for Vincent's infection or for thrush, in the ab-

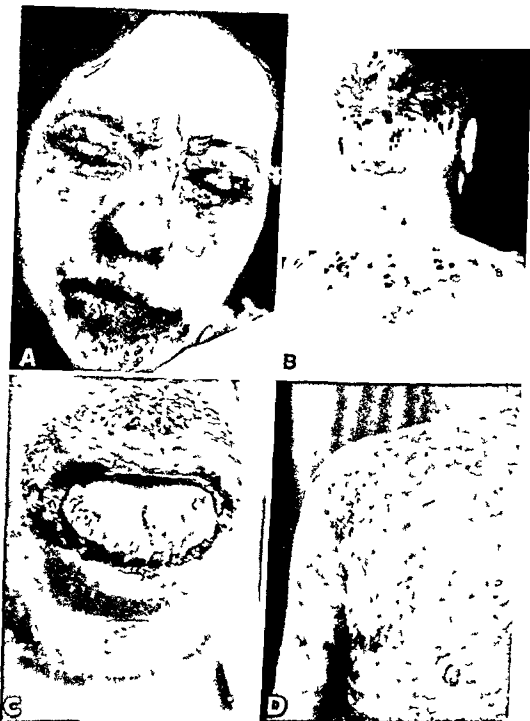



Plate 33

*Pemphigus Vulgaris* A the bullae rupture readily leaving exudative bright red crusted sites B under therapy desiccation of the lesions has occurred C bullae or denuded areas often occur in the mouth sometimes for weeks or months before the skin is involved D partial suppression from treatment of a widespread eruption a few bullae are still developing

econdary pyogenic infection usually enters the picture. When the patient s observed the chief feature is often the presence of flaky crusting.

3 *Pemphigus vegetans* (Plate 34 D) The initial lesions are bullous out these soon rupture and vegetative plaques appear The surface of the affected skin is moist As in the other two varieties there is an offensive odor. The lesions tend to localize in the axillae and inguinal regions and genitalia Bullae may also appear on the buccal mucosa

4 *Pemphigus erythematosus* In this nondescript variety the lesions are often difficult to distinguish from lupus erythematosus and seborrheic dermatitis with lesions present on the scalp face and often on the upper part of the trunk In many instances however patients after several months develop true pemphigus vulgaris (Plate 34 B)

5 *Acute or Butcher s Pemphigus.* The onset is sudden severe constitutional symptoms accompany the bullous rash suggesting an infection Most of the patients have had contact with dead animals being butchers trappers e

6 Far

disease rec

the sides c

Often other instances occur in the family The general health is unaffected The consensus is that this is not a form of pemphigus

Etiology Unknown A bacterial or viral etiology has been suspected but is not yet proved No age is exempt patients are usually adults of middle age and are often of Semitic origin Metabolic and psychogenic factors are mentioned but most observers believe they are the result of the disease

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Plate 34

with
patie
pemphigus (Hailey and Hailey) D, ...
the axillae and inguinogenital areas

sence of positive laboratory findings and particularly if the patient is middle-aged, should immediately lead to a suspicion of pemphigus

Treatment. 1 *Patients with pemphigus should be hospitalized immediately.* One of the more important fundamental details in treatment is a high calorie, high protein diet, because of the almost invariable finding of *low blood proteins.* When mouth lesions are present, there is often resistance to the urging to eat At first a liquid diet or semisoft diet may be supplemented by eggnogs and protein hydrolysate

2 *Blood transfusion* is often effective particularly if there is coincidental anemia

3 Such *local treatment* should be utilized as will aid in the comfort of the patient To this end continuous baths are sometimes extremely helpful Since such baths are usually not available wet potassium permanganate soaks (1 25 000) may be applied intermittently for one hour three times a day Some patients do well on a regimen of local application of talc U S P To others the application of neocalamine lotion is soothing As a rule greases are not well tolerated Application of 1 per cent aqueous gentian violet not only is soothing but tends to reduce the secondary bacterial infection Sometimes application of firm dressings will tend to reduce the amount of protein lost from the exuding areas of skin

4 Since secondary infection is common and may play a part in the toxemia noted in these patients it is usual to administer penicillin in short courses or to prescribe a tetracycline drug by mouth In practice *a succession of antibiotics are usually employed,* giving each one for a short period and alternating with other agents

5 The administration of **corticotropin or corticosteroids,** while not to be considered curative results in most instances in remission of the disease Various techniques have been used It would appear that patients vary considerably in their response to either or both of the drugs and that no fixed schedule may be considered as the best for all It is frequently advisable to administer corticotropin intramuscularly once weekly while a corticosteroid drug is taken by mouth three or more times daily When a remission is obtained dosage of the drugs should gradually be reduced to zero Most patients eventually relapse Careful laboratory determinations are essential during administration of the drugs and potassium chloride should always be given as well Since the corticosteroids are usually administered for a long period careful scrutiny should be kept for intercurrent infections such as pne[illegible]
customary to administer
courses for prophylaxis

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7 [illegible]
be usec
fetid oc

# The Maculopapulo-Squamous Diseases

THE DISEASES *discussed in this* chapter have certain common morphologic appearances which may at times lead to confusion in diagnosis So far as is known, there are no common, basic, etiologic factors except that, in a negative direction, the causes are either unknown or disputed Besides *the six diseases discussed in this chapter, other conditions of similar ap*pearance are seborrheic dermatitis (Chapter 2), lupus erythematosus (Chapter 6), the dry forms of eczema (Chapter 3), some superficial varieties of fungus disease (Chapter 10), and cutaneous syphilis (Chapter 12) *When indicated, the points important in differentiating the various disorders* will be repeated This chapter includes discussion of the following diseases

1 Psoriasis
2 Parapsoriasis
3 *Lichen planus*
4 Lichen nitidus
5 Pityriasis rosea
6 Pityriasis rubra pilaris

## Psoriasis

(Gk *psora,* the itch)

Psoriasis is a common disease of unknown origin, readily diagnosed as a rule, in which *the course is unpredictable and no specific treatment is* known In spite of this, the empirical approach is often successful

**Symptoms.** Perhaps in no other dermatosis are the features so variable and yet so distinctive Pruritus is usually slight, but occasionally it is troublesome *There is a marked predilection for certain areas of* the body, including the *scalp* (Plate 35, A), the regions over the *elbows and knees,* and the *lower part of the back.* However, in many instances, other parts of the body are affected The individual lesions consist of patches or plaques

of scaly erythema The color is ***basically dull red*** The scales also are dis

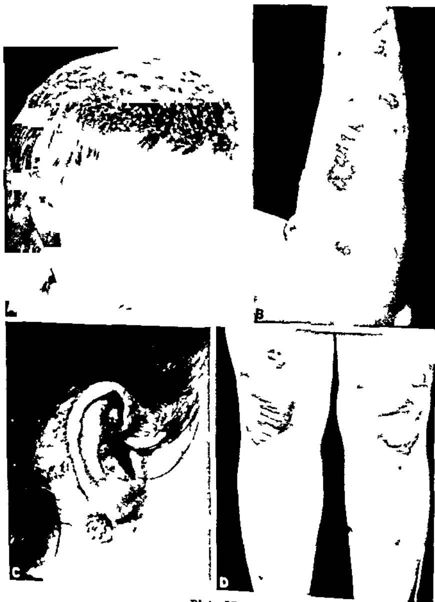


Plate 35

*Psoriasis* . . . . . . . . . . . . . .
scaly lesions . . . . . . . . . . . .
D *guttate* p . . . . . . . . . . . .

es

# The Maculopapulo-Squamous Diseases

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**Table 4. *Differential* Diagnosis of Maculopapulo-Squamous Eruptions**

| | *Syphilis II* | *Psoriasis* | *Pityriasis Rosea* | *Tinea Versicolor* | *Seborrheic Dermatitis* | *Parapsoriasis* | *Lichen Planus* | *Lupus Erythematosus* |
|---|---|---|---|---|---|---|---|---|
| Scale | scanty | abundant micaceous *bleeding* points | adherent *on* border, fine in center | branny | yellow, greasy | fine, opaque | shiny | adherent 'carpet tack' |
| Induration | ++++ | + | 0 | 0 | + | 0 | + | + |
| *Oral lesions* | + | 0 | *0* | 0 | 0 | *0* | + | rare |
| Face, palms, soles | + | rare | rare | *0* | face | face | 0 | face |
| Nails | + | +++ | 0 | *0* | 0 | 0 | rare | 0 |
| Color | light brownish red | *dull red* | medium yellowish pink | red brown | dull pink | faded pink | violaceous | purple-red |

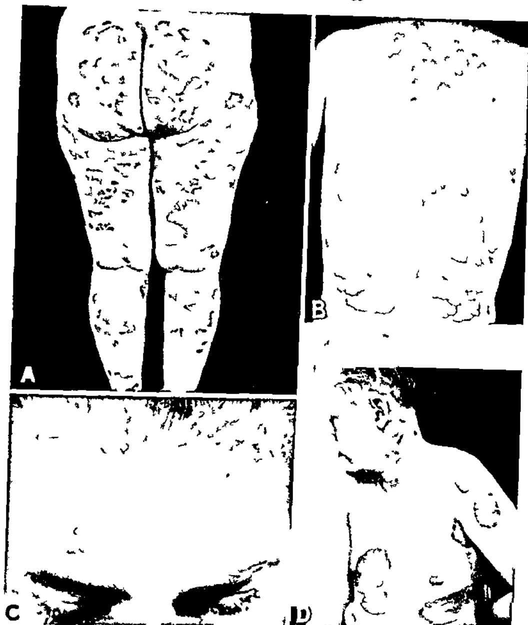



Plate 36

*Psoriasis* A widespread symmetric plaquey eruption B coalescence produces a geometric pattern scales are thick and adherent C the scalp is a favored site special diagnostic importance is attached to involvement of the anterior hair line D *psoriasis inversa* in which there is a predilection for flexural and intertriginous localization

lesions may remain small giving rise to the term *"guttate psoriasis"* (Plate 35 D) With coalescence of adjacent lesions plaques often form With further joining together large gyrate and configurate areas may develop covering large surfaces of the body In *psoriasis inversa* the flexural and intertriginous areas are favored (Plate 36 D)

Sometimes only one or very few patches of psoriasis occur *In this* event the hands and feet alone may be affected and the condition be therapeutically a most resistant type of psoriasis A condition known as *pustular psoriasis* (acrodermatitis pustulosa perstans) which also localizes




Plate 37

*Psoriasis Lesions of the hands and feet A these discrete plaques represent the*

placed in part by thick scales as disease encroaches on nail bed

tive diagnosis may rest on the family and personal history and *concomitant* clinical and laboratory findings In moniliasis satellite lesions are frequently observed and the causative fungus may be demonstrated

**Treatment** Individual patients may vary in their response to different types of treatment but therapy on the whole may be considered fairly satisfactory Sometimes a patient will be benefited greatly by simple measures whereas another may prove refractory to a diverse program including all the known effective agents It is this latter group of patients who are prey to the vicious and misleading advertising claims for various nostrums

to the palms and soles, may or may not be an aberrant form of psorias (Plate 38, A), the lesions are deep-set, sterile pustules which usually d velop symmetrically and rarely appear on any other parts of the body

It is not uncommon to observe *pitting of the nails* as a concomitai finding Occasionally, also, the nails are involved in a more diffuse proces simulating the yellow, friable, dystrophic nails seen in onychomycosis I both conditions there may be an accumulation of detritus under the fre margin of the nail In *acute psoriasis,* multiple pruritic lesions develo quickly and involve widespread sites A dreaded complication of psorias is the disorder known as *generalized exfoliative dermatitis* Psoriatic lesioi are lost in the almost if not absolutely universal scaly erythroderma T most observers this is due to an inherent predisposition plus the use c remedies which are too stimulating The disease may also develop withou antecedent psoriasis Some consider that the occasional association o *psoriasis with rheumatoid arthritis* suggests a possible etiologic relationshir However, this appears to be a coincidental occurrence of two fairly commo diseases in the same individual

**Etiology.** The cause of psoriasis is unknown An enigma for centuries it is a challenge to the investigative ingenuity of modern research workers None of the theories of its causation have been satisfactory, although th range is wide, including the possibility of microbic disease or an erro in metabolism Biochemical studies indicate some alteration in the aminc acids of the soluble fraction of the keratin of scales. It is responsible foi approximately 5 per cent of all dermatoses No age is exempt, but mos cases occur between the ages of puberty and the climacteric More mei than women are affected It is rarely seen in the Negro. In at least half of the cases there is an associated family history The onset may be partially explained by trauma the *occurrence over the elbows and knees* being thus interpreted

**Pathology.** There is diffuse parakeratosis The epidermis is alternately acanthotic and thinned Small mononuclear containing abscesses (Munro) are located high in the epidermis The rete pegs are elongated and clubbed In the papillae the vessels are dilated, the surrounding infiltrate contains lymphocytes and histiocytes

**Differential Diagnosis.** There will be very little difficulty in recognizing the typical or average case of psoriasis The sites of involvement (extensor surfaces of elbows and knees) and the *silvery character* of the scale, together with the punctum remaining when the scale is removed leave little *room for* doubt

When the scalp alone is involved and when the flexural and intertriginous areas are favored, seborrheic dermatitis or moniliasis may be simulated In psoriasis of the scalp the tendency is for dry, scaly, patchy involvement, whereas in *seborrheic dermatitis* there is more diffuse involvement, the scaling is greasy, and there is a tendency to loss of hair When lesions are present in the axillae, groin, perianal region, or inframammary areas, clinical differentiation of *psoriasis, seborrheic dermatitis, and moniliasis* on appearance alone, is difficult In such cases a presump-

Most patients improve during the summer and especially under vacation conditions A patient should be given a careful physical examination particularly to determine if there is any residual focus of infection

1 *Local Measures* In all instances the scales should be removed before a medicament (usually an ointment) is applied If the onset is abrupt and the *lesions acutely erythematous* and numerous local therapy must be soothing or only mildly stimulating In such instances the use of a 1 per cent water soluble tar, or oil of cade in boric acid ointment is to be preferred to more irritant reducing agents Ammoniated mercury ointment (2 to 4 per cent) may be utilized as an alternate application If the patient has *the usual form of the disease,* with a moderate number of lesions characteristically covered with a thick scale overlying the plaques keratolytic drugs may be used in gradually ascending concentrations A combination of 3 per cent salicylic acid and 6 per cent ammoniated mercury in ointment base is suitable for the initial applications increasing the percentages of the active drugs as tolerance is established *Chrysarobin is an excellent drug* but notorious because it very readily produces conjunctivitis and stains linen purple and the skin and nails brown Nevertheless freshly prepared and used carefully it is probably the best single medicament known for the treatment of psoriasis It may be incorporated in an ointment base (1 to 2 per cent) or in collodion (10 to 20 per cent) It should never be used around the face and gloves must be worn if it is applied to the hands The efficacy of distilled tar, applied either in crude form or as one of the refined products incorporated in an ointment base is gr

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customary to use a strong ammoniated mercury ointment (6 to 20 per cent) in one of the water soluble bases (hydrophilic ointment U S P Neobase Carbowax 1500) In *inveterate psoriasis,* similar remedies are employed but the concentration of active drug must usually be higher than for the ordinary form

2 *Physical Agents* *Sunlight* and *artificial ultraviolet rays, even* without prior application of medication are usually helpful *Roentgen therapy* is often strikingly effective It should be used with caution because of the probability of recurrence of the disease and the consequent danger of overdosage if treatment is *continued* *If* x ray therapy is contemplated the patient should be questioned carefully *about* previous exposures It is important also to evaluate the ability of the patient to give a correct history The administration of x rays should be the responsibility only of a dermatologist

3 *Diet* It is customary though not too helpful to outline a low fat, low-cholesterol diet This is based on the *assumption* that in many patients the cholesterol metabolism is disturbed

4 *Internal Remedies* Although many drugs have been used in the treatment of psoriasis the tendency now is to use fewer and fewer of them *Vitamin A* orally in a dose of 50,000 to 100 000 units daily will almost

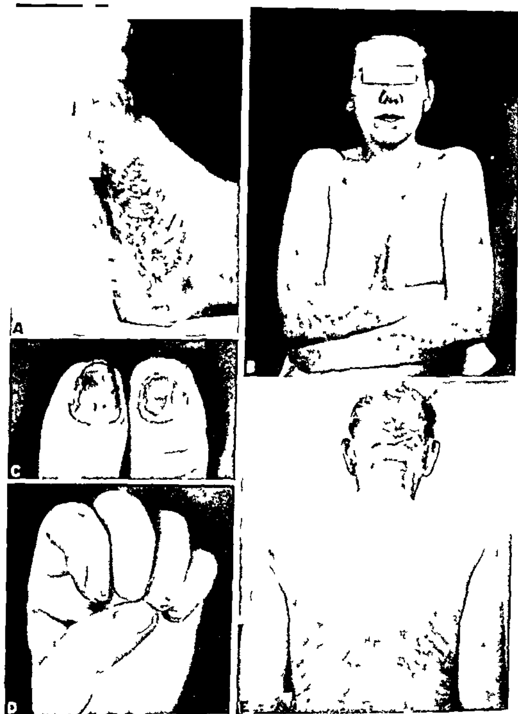



**Plate 38**

*Psoriasis* A *pustular psoriasis* usually limited to the soles and palms pustules are sterile B *acute psoriasis* appearing after smallpox vaccination C *psoriasis of the nails* may resemble onychomycosis D *psoriasis of the nails* evidenced by pitting and longitudinal striae E *universal erythroderma* as a sequel to psoriasis in many instances the final diagnosis is lymphoblastoma

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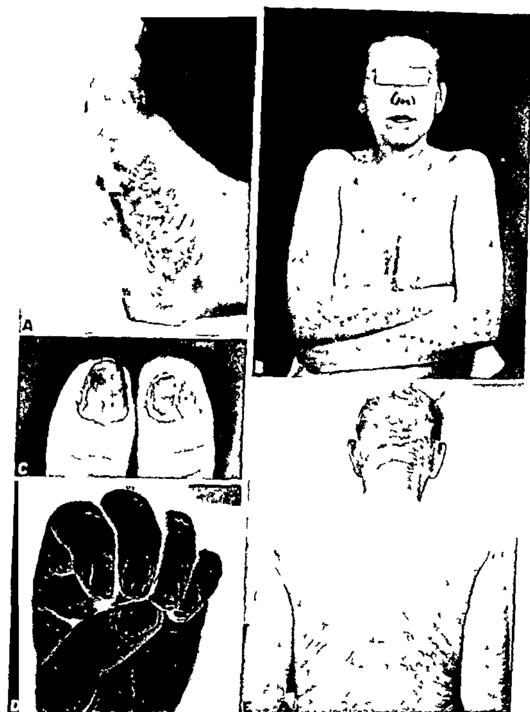


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Plate 39

*Pa apsoriasis* A the *gut a e* ar ety B *parapso iasis l* *heno des* C *pa apso iasis en plaque* the type that may e entuate in mycosis fungo des D n *pa apso iasis ta i l form* o the acu e ype the le ons often spontaneou ly resol e af e a few months

always reduce the amount of scaling This routine may be continued indefinitely, three weeks out of four In instances when response to other remedies is poor, arsenic may be prescribed, if *Fowler's solution* is given it is customary to start with one drop three times a day after meals, increasing one drop each week and terminating the treatment after four to six weeks Occasionally, *sodium salicylate*, 5 grains three times daily, is well tolerated and appears to be beneficial While administration of corticotropin or corticosteroids at times results in partial or complete disappearance of psoriatic lesions they should be used only very occasionally, after due deliberation and preferably consultation The common history is that while improvement may occur for a time there will be a prompt relapse when administration is stopped, and the eruption frequently becomes more widespread and more difficult to control For relief of itching in acute psoriasis or when generalized exfoliative dermatitis has supervened, one or more antihistamines should be prescribed

5 Treatment of *psoriasis of the nails* is not indicated if the only lesions are pits If the nails are more severely affected, x ray therapy may be useful, but the dose should be conservative, and administered only by a dermatologist

6 *Occasionally, basic emotional conflicts are important Empirically*, phenobarbital, gr ¼ three times daily, or small doses of a tranquilizing drug are often advisable

7 The antimalarial drugs should never be prescribed since there is almost always an exacerbation and not infrequently exfoliative dermatitis develops from their administration

## Parapsoriasis

(Gk *para*, beside + *psora*, the itch)

Under the heading of parapsoriasis are included a number of conditions which are superficial, nonpruritic, and resistant to therapy

Symptoms The lesions appear on the extremities or trunk, are indolent, and usually asymptomatic The initial lesion is a macule, or a maculopapule covered with a fine scale which tends to spread peripherally The course is variable, with additional lesions forming at irregular intervals The manifestations may be so obscure that a correct diagnosis is made only by exclusion of other possibilities There are four main types

1 *Parapsoriasis guttata* *This type closely resembles the* guttate form of psoriasis with [illegible] lesions (Plate 39, A) Parapsoriasis is distinguished by [illegible] is, arms), the scaling is less pronounced, and [illegible] in other varieties, the histologic appearance reveals a nondescript finding distinguished from the typical picture to be seen in psoriasis Secondary syphilis is sometimes simulated by this form of parapsoriasis *The absence of history of a primary* lesion, no lymphadenopathy or throat lesions, and negative serologic reaction tend to rule out this possibility

2 *Parapsoriasis lichenoides* In this variety the lesions are elevated,

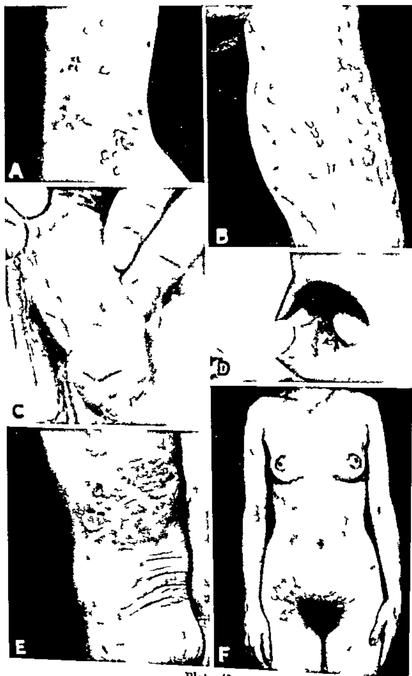



Plate 40

*Lichen Planus* A the les ons a e fl

dull red, and scaly, and are widespread over the trunk (Plate 39, B). They tend to coalesce, giving a retiform (netlike) appearance to the rash.

3. *Parapsoriasis varioliformis* (Plate 39, D). In this form the onset is more acute, the initial lesions being either papules or vesicles. The resemblance to varicella is sometimes striking. The vesicular lesions often become pustular or crusted, and necrotic areas appear, leaving scars as they involute. Lesions of ordinary guttate parapsoriasis also are often present. The condition usually lasts only a few weeks or months and heals spontaneously. Varicella is usually readily distinguished by the duration, the absence of constitutional symptoms, and the multiform type of rash.

4. *Parapsoriasis en plaque.* The lesions here are irregularly larger than the other varieties and consist of well defined, scaly, papular plaques varying from yellowish red to brownish in color (Plate 39, C). In this type itching occasionally is present. This variety offers a threat to the patient, as it may be a *precursor of mycosis fungoides* (see Chapter 23).

**Etiology.** The cause is unknown. Although it usually occurs in adults, the disease is not uncommon in children. Men are more frequently involved than women.

**Treatment.** In many instances no therapy is required. However, many patients are unwilling to accept reassurance without treatment. Some temporary help can often be secured by use of ultraviolet rays, either by exposure to the sun or by treatment with an ultraviolet lamp. It is also known that therapy with vitamin $D_2$ (Calciferol) will cause some improvement or temporary disappearance of the lesions. It is also imperative to perform a biopsy in all patients with parapsoriasis en plaque, to discover any evidence of beginning mycosis fungoides.

## Lichen Planus

(Gk. *leichen*, tree moss, L. *planus*, flat)

Lichen planus is a not uncommon skin disease which has typical features and is difficult to cure.

*Symptoms.* The disease is usually ***extremely pruritic***, and tends to be bilateral and symmetric. The primary lesion is a characteristic, ***non-scaly papule of peculiar violaceous hue, flat topped, and often umbilicated*** (Plate 40, A). *The outline of the lesion may be polygonal.* Wickham's striae, consisting of a fine, cloudy network over the surface, are characteristic. The lesions may remain discrete but often coalesce to form large or small patches. Lesions not uncommonly follow a linear distribution (Plate 40, B), indicating that they have developed in a scratch mark (*Koebner phenomenon*). Certain parts of the body are particularly susceptible to the disease, including ***the anterior surface of the wrist, inner thigh, lower part of the back (sacral region), and the buccal surface of the inner cheek, particularly opposite the first molar*** (Plate 40, D). The bluish white reticulated (lace-like) appearance of the lesions in this latter location presents a readily recognizable picture. Buccal lesions may occur independently of lesions on the skin. Occasionally lesions are seen on the dorsum of the tongue and on the glans penis, where they tend to be circinate with clearing

Symptoms The lesions are skin-colored or slightly pinkish shiny circinate and rounded papules which develop in groups remain pinhead sized or slightly larger and seldom coalesce They tend to develop on the genitals across the abdomen and on the flexor surface of the forearms Occasionally the *condition becomes generalized* There is *no itching* and mucous membranes are seldom involved

Differential Diagnosis The absence of itching together with the characteristics noted above serve to rule out lichen planus

Etiology Unknown The histologic architecture of the lesion is suggestive of a tuberculoderm but confirmatory data are lacking The condition is much more common in males

Pathology The rete pegs are flattened and the epidermis is thinned by the inflammation in the upper cutis consisting of epithelioid cells lymphocytes and histiocytes

Treatment X ray therapy and bismuth injections are *sometimes* given The lesions may disappear spontaneously

## Pityriasis Rosea

(Gk *pityra* bran L *rosa* red)

Pityriasis rosea is a self limited disorder which develops abruptly and may usually be recognized at a glance Not *uncommonly* however atypical manifestations offer difficulty in differential diagnosis Second attacks are uncommon

Symptoms In the classic involvement the *eruption* is symmetric The trunk is primarily affected and the limbs less so At times the disorder may be limited to one extremity to the bathing trunk area (Plate 41 C) or to some other part of the body The first evidence of the disease is a so-called ***herald patch*** (Plate 41 A) which precedes the *more extensive* eruption by a few days The herald patch and many of the lesions which follow tend to be ***oval shaped with the long axis following the dermatomes*** The secondary lesions appear in one or more crops gradually increase peripherally and maintain a relatively similar size one to another of the same crop Each lesion is covered by a notably fine scale which is characteristically attached at the periphery In another variant the lesions are elevated and the scaling is much less pronounced This is the so called *papular variety* Mucous membrane lesions have been reported but are a rare complication Itching is severe in some patients moderate to negligible in others

Differential Diagnosis When the itching is severe and particularly when the lesions *are not* uniform the possibility that the rash is a precursor of lichen planus should be *considered* The most *important* disease to rule out is ***secondary syphilis*** Careful examination of a patient with secondary syphilis may reveal generalized lymphadenopathy injected fauces lesions on the palms or soles mucous patches in the mouth or around the anus and a scar at the site of the healed or healing chancre constitutional symptoms of headache sore throat and a feeling of malaise should also be present ***All patients with pityriasis rosea should receive a blood serologic***

center *Hypertrophic lesions* (Plate 40, E) may develop, especially on the legs below the knees but occasionally on other sites, such as the back of the hand An important variant is *acute lichen planus,* in which a widespread eruption appears, occasionally vesicular but more often initially resembling pityriasis rosea (Plate 40, F) In this form pruritus is even more pronounced than in the ordinary variety Another form is *lichen planopilaris* in which follicular spiny papules appear, chiefly on the scalp and frequently accompanied by atrophy and alopecia

**Differential Diagnosis** Typical cases present no difficulty Certain drugs, notably Atabrine, arsenic, and occasionally gold, are known to produce eruptions that resemble lichen planus to a marked degree The hypertrophic form of lichen planus may be simulated by localized atopic eczema and occasionally by psoriasis Lichen planus of the buccal mucosa, particularly when it is the sole manifestation of the disease, always must be distinguished from lupus erythematosus and leukoplakia The lesion of leukoplakia usually is not reticulated and is pure white as distinguished from the bluish white of lichen planus Leukoplakia also tends to involve the lower lip and tongue, rather than the inner cheeks

**Etiology** The cause of lichen planus is not proved Many features make it more than probable that it is of infectious origin Women are somewhat more prone to develop the disease than men, most cases occur after the age of thirty Multiple cases in families are not uncommon

**Pathology** Mild hyperkeratosis is noted The granular layer is thicker than normal and a typical 'plate like' acanthosis is present The rete pegs are pointed In the upper cutis the lymphocyte and histiocyte inflammatory reaction is dense and hugs the epidermis There is liquefaction degeneration of the basal margin in many areas

**Treatment** The disease usually is quite rebellious to treatment Sometimes the itching can be controlled by administration of antihistamine drugs by mouth and an antipruritic cream consisting of 0 5 per cent of menthol and phenol in cold cream, applied locally Dietary restrictions are not indicated Intramuscular injections of bismuth subsalicylate, 1 to 2 cc, once weekly, may be given, the usual course extending over six to ten weeks Occasionally intramuscular injection of crude liver extract, 1 to 2 cc, twice weekly, has helped In some instances the disease should be treated concomitantly by administration of x rays The customary dose is 75 r of unfiltered radiation, once weekly, for four to ten treatments An antimalarial drug such as chloroquine, 250 mg twice daily, is often effective Mouth lesions that persist for months or years, particularly in older patients, should be periodically inspected, since malignant change is a threat, in all cases, tobacco should be interdicted

## Lichen Nitidus

(Gk *leichen,* tree moss, *nitidus,* shining)

Lichen nitidus is a rare disease which may be confused with lichen planus

Symptoms The lesions are skin-colored or slightly pinkish shiny, circinate, and rounded papules which develop in groups, remain pinhead sized or slightly larger, and seldom coalesce They tend to develop on the genitals, across the abdomen and on the flexor surface of the forearms Occasionally the condition becomes generalized There is no itching and mucous membranes are seldom involved

Differential Diagnosis The absence of itching together with the characteristics noted above, serve to rule out lichen planus

Etiology Unknown The histologic architecture of the lesion is suggestive of a tuberculoderm, but confirmatory data are lacking The condition is much more common in males

Pathology The rete pegs are flattened and the epidermis is thinned by the inflammation in the upper cutis consisting of epithelioid cells lymphocytes and histiocytes

Treatment X ray therapy and bismuth injections are sometimes given The lesions may disappear spontaneously

## Pityriasis Rosea

(Gk *pityra*, bran L *rosa*, red)

Pityriasis rosea is a self limited disorder which develops abruptly and may usually be recognized at a glance Not uncommonly, however, atypical manifestations offer difficulty in differential diagnosis Second attacks are uncommon

Symptoms In the classic involvement, the eruption is *symmetric* The trunk is primarily affected and the limbs less so At times, the disorder may be limited to one extremity, to the bathing trunk area (Plate 41, C) or to some other part of the body The first evidence of the disease is a so-called *herald patch* (Plate 41, A), which precedes the more extensive eruption by a few days The herald patch and many of the lesions which follow tend to be *oval shaped with the long axis following the dermatomes* The secondary lesions appear in one or more crops, gradually increase peripherally and maintain a relatively similar size one to another of the same crop Each lesion is covered by *a notably fine* scale which is characteristically attached at the periphery In another variant the lesions are elevated and the scaling is much less pronounced This is the so-called *papular variety* Mucous membrane lesions have been reported but are a rare complication Itching is severe in some patients moderate to negligible in others

Differential Diagnosis When the itching is severe, and particularly when the lesions are not uniform, the possibility that the rash is a precursor of lichen planus should be considered The most important disease to rule out is *secondary syphilis* Careful examination of a patient with secondary syphilis may reveal generalized lymphadenopathy, injected fauces lesions on the palms or soles mucous patches in th

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## Lichen Nitidus

(Gk *leichen,* tree moss, *nitidus,* shining)

Lichen nitidus is a rare *disease which may be confused* with lichen planus

Etiology. Many *features strongly suggest an infective process, particularly the initial lesion, the abrupt symmetrical outbreak, and the tendency to spontaneous cure.* The incidence in respect to sex is almost equal, and the young are more vulnerable The disorder is common in the spring and fall A history of the recent purchase of new sleeping garments, underwear, etc, which are worn without first washing, is frequently obtained

Treatment. Spontaneous cure regularly occurs in six to eight weeks, although cases lasting for months and even years have been reported Second attacks are rare If there is considerable pruritus, colloid baths may be suggested, a phenolated or mentholated cold cream prescribed for local application, and antihistamine drugs given internally Ultraviolet irradiation may assist in involution of the lesions The rays are best given in a suberythema or a mild erythema dose, for several times at intervals of four to seven days Keratolytics and astringent preparations are contraindicated

## Pityriasis Rubra Pilaris

(Gk *pityra,* bran, L *ruber,* red, L *pilus,* hair)

Pityriasis rubra pilaris is a mildly inflammatory disorder with a characteristic distribution

Symptoms The lesions at first are firm reddish brown papules, and are mostly follicular They tend to coalesce and gradually the eruption covers wide areas on the sides of the neck, the trunk, and the extremities Diffuse scaling develops over the scalp and eventually over the elbows and knees *The rough-surfaced, conical papules pierced by hairs on the dorsal surfaces of the first and second phalanges are pathognomonic.* The palms and soles may show diffuse hyperkeratosis The course of the disease is chronic with partial remissions and exacerbations Pruritus is not a prominent symptom

Etiology The condition affects men more commonly than women, beginning in early adult life The cause of the disease is unknown There is some evidence that a vitamin A deficiency may be partially responsible

Pathology There is follicular hyperkeratosis and patchy parakeratosis The epidermis is acanthotic and there is liquefaction degeneration of the basal layer

Treatment. Intensive therapy with vitamin A, 50,000 to 100,000 units daily by mouth sometimes aids in bringing the condition partially under control

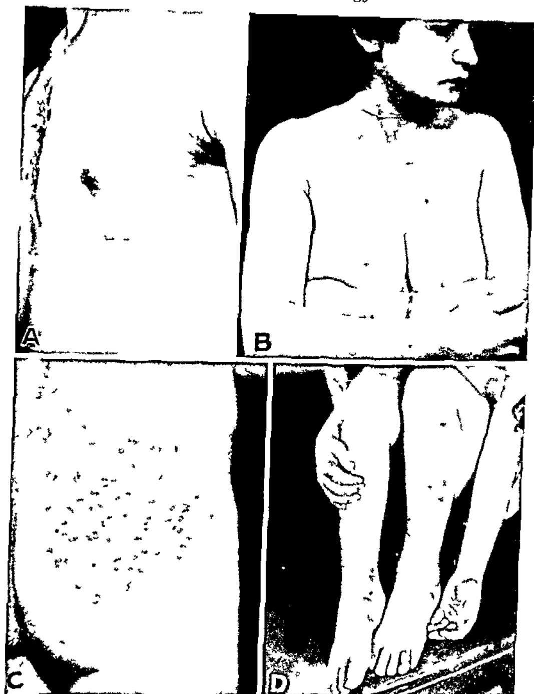



**Plate 41**

*Pityriasis Rosea.* A, herald patch, a solitary lesion preceding the more general eruption. B, widespread distribution including face; pruritus at times is intense. C, the disorder may be limited to the bathing trunk area. D, unusual involvement of extremities; lesions also are edematous.

*test for syphilis. Seborrheic dermatitis* will also involve the scalp and tends to localize over the sternum and in the axillae. *Tinea circinata* may be considered, but the lesions of this disorder are not symmetrically distributed, are more variable in size and reveal a clearing center, and fungi may be demonstrated in scrapings (see table on p. 91).

internal use but do not prevent their local administration In this category are *neomycin* and *bacitracin*. The development of drug resistance by microorganisms is a matter of deep concern

The conditions discussed in this chapter are grouped under the following headings

1 *Superficial Glabrous Infections*
   (a) *Impetigo contagiosa*
   (b) Ecthyma
   (c) Pyoderma gangrenosa
   (d) Tropical ulcer
   (e) Dermatitis repens
   (f) Diphtheria and diphtheroid infections
   (g) Acne varioliformis (necrotica)
   (h) Granuloma pyogenicum (see Chapter 22)
2 *Hair Follicle and Sweat Gland Infections*
   (a) Folliculitis
   (b) Sycosis vulgaris
   (c) Furunculosis (furuncles and carbuncles)
   (d) Hidradenitis suppurativa
3 Invasive Infections
   (a) Acute paronychia
   (b) Lymphangitis and cellulitis
   (c) Erysipelas
   (d) Erysipeloid

From one point of view *infectious eczematoid dermatitis* should be included as a pyoderma, but since allergy is also involved it is discussed under eczematous dermatoses (Chapter 4) *Granuloma pyogenicum* might be included here but is discussed in Chapter 22, with conditions of somewhat similar clinical appearance

## Superficial Glabrous Infections

In this group of pyogenic disorders, as in most other infections, there is a practical advantage in a careful bacteriologic study prior to beginning therapy The treatment is simple and the results excellent, although occasionally the response to therapy is disappointing In such cases sensitivity tests are of great help in deciding the next step

### Impetigo Contagiosa

(L *impeto*, I attack)

Impetigo is a common disease of childhood, evidenced as a rule by a rapidly progressing crusting dermatosis

Symptoms. The lesions at first are vesicles or bullae which quickly become pustular These are readily ruptured, with subsequent formation of crusts It is notable that the lesions are superficial, and usually with an *adherent, light brownish yellow crust*, surrounded by erythema *If the*

*Chapter 9*

# The Pyodermas

INFECTION of the skin by pus-forming *microorganisms may result in a diverse number of clinical pictures.* The infection may be acute (remaining localized or spreading rapidly to internal organs), subacute, or chronic. The variation in the form observed is due to the species and virulence of the infecting agent, the number of organisms in the inoculum, the opportunity to break down natural barriers, and the state of resistance of the patient. Estimation of blood globulin, especially the gamma fraction, may be revealing in cases of chronic, recurrent, pyogenic infections, particularly with ulceration. Coagulase-positive microorganisms almost invariably invade any type of dermatitis. As a rule, they are not found on normal skin.

***Modern developments in the antibiotic field*** have been most helpful in adding materially to the resources of the physician in dealing with recalcitrant pyogenic infections. The tendency is to evaluate each case on its own merits and not to routinely prescribe an antibiotic drug. At times there is an advantage in carrying out ***sensitivity tests*** prior to initiating therapy, but since this requires 24 to 48 hours, treatment of an acute, rapidly spreading infection should not be postponed until the results are known. With life-saving effects similar to those obtained when sulfonamide drugs first appeared, ***antibiotics*** such as ***penicillin,*** the ***tetracyclines, chloramphenicol, streptomycin (dihydrostreptomycin), novobiocin, erythromycin*** and ***oleandomycin,*** as well as the soluble and long-acting ***sulfonamides*** (Gantrisin, Kynex) may be used ***either singly or in combination*** in severe infections or in threatening situations, and the results are most gratifying. Although usually administered parenterally, these antibiotic agents are also effective when applied topically in many of the infections of the skin. There are ***two disadvantages to local therapy*** with antibiotic drugs: (1) the possibility of producing sensitivity to a drug which may make dangerous or impossible its later use for a serious internal infection, such as pneumonia, and (2) a disturbance in the natural flora of the skin and mucous membranes, which may also result from internal administration of these drugs. Additional drugs of this order have ***toxic side effects*** which preclude their

in children but the response to therapy is usually less satisfactory (Plate 42 B) Impetigo most commonly affects the face and hands and less commonly the arms and legs It is rarely seen on the trunk The regional lymph nodes may be enlarged Newborn infants because of the poorly formed stratum lucidum are subject to a severe bullous impetigo (pemphigus neonatorum) in which the mortality rate is high

Etiology The disorder may be produced by either *Streptococcus hemolyticus* or *Staphylococcus aureus* or both It is a frequent complication of scabies and of pediculosis particularly pediculosis capitis No immunity is conferred by an attack An epidemic among children develops quickly and rapidly gets out of hand unless it is recognized and treated In the past the appearance of impetigo in the newborn has been sufficient to close a maternity ward It is still a serious disease when it affects newborn babes or new mothers

Differential Diagnosis The disease is to be distinguished from other forms of pyogenic infection In impetigo crusting develops quickly and the process is extremely superficial Furthermore it affects mainly children

Treatment One should restrict the activities of the individual so that other children are not exposed to the infection It is important that no one else has the opportunity of using the patients towel Once treatment is undertaken the chance of spread is much less but the danger still persists as long as any crusts remain Cure is usually obtained within a few days It is a good rule always to search carefully for an underlying pruritic skin disease particularly *pediculosis capitis* It is surprising how frequently nits will be discovered A urinalysis should be performed

*Local measures are usually sufficient* to cure the disease Prior to application all crusts should be removed either with soap and water or with mineral oil The medicament should be applied three or four times daily A useful preparation is 3 per cent ammoniated mercury in 10 per cent zinc paste Both neomycin ointment and bacitracin ointment are effective preparations Rarely complications such as a deep infection or nephritis are observed In such instances penicillin parenterally or a tetracycline drug by mouth is indicated For the more stubborn cases particularly in adults penicillin may be administered intramuscularly

## Ecthyma

(Gk *ekthyma* a pustule)

Ecthyma is similar to impetigo but the process is deeper in the skin and healing leaves a residual scar

Symptoms The lesions occur most frequently on the lower extremities chiefly below the knees The primary lesion is a pustule After several days the lesion ruptures and becomes crusted below this is an ulceration The ulcer occasionally continues to spread peripherally but in most cases heals slowly under treatment

Differential Diagnosis The condition usually appears obviously pyogenic and can be differentiated from impetigo because it is deeply set and ulcerative




Plate 42

*Pyogenic Infections Impetigo contagiosa* A moist annular lesions one should always search for coincidental pediculosis B in an adult in contradistinction to a child the disease is usually resistant to treatment *Dermatitis repens* C a severe invasive pyoderma usually involving the fingers and occurring particularly around the nails *Acne varioliformis* D distribution is usually as shown

crust is removed there is considerable exudation The disease is auto inoculable, and quickly spreads both peripherally and to remote parts of the body Sometimes there is an obvious focus of pyogenic infection Constitutional symptoms are rare In adults, particularly when the beard is involved in the male, the lesions may not become as large as they do

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Differential Diagnosis The condition usually appears obviously pyogenic and can be differentiated from impetigo because it is deeply set and ulcerative

**Etiology.** Ecthyma may be a complication of scabies or of some other pruritic skin disease The same organisms are involved as in impetigo Many of the patients are in ill health due to some debilitating factor

**Treatment** The general health of the patient should be investigated Any coincidental skin disease, such as scabies, should receive attention Local therapy, as described for impetigo, should be supplemented with one or more of the antibiotic agents administered by mouth or parenterally Contaminated clothing should be sterilized or dry cleaned

## Pyoderma Gangrenosum

This is a chronic, recurrent, ulcerative disorder observed in debilitated patients or in the presence of a deep focus of infection

**Symptoms.** Ulcerations are usually multiple and show undermining of the edges with peripheral spread There is a tendency to coalescence Occasionally the ulcerative lesions are numerous

**Etiology.** Ulcerative colitis is commonly associated Hypogamma globulinemia has been found in some patients Chronic empyema or other foci may be a basic factor The bacteriologic findings are inconstant

**Treatment.** 1 The internal focus should be eliminated, if possible

2 *Hot boric acid packs, intermittent, may help*

3 Penicillin, tetracycline, and other antibiotics, singly or combined should be employed

## Tropical Ulcer

This disorder is observed in the native population of the humid tropics

**Symptoms** A pustule develops, discharges and fails to heal In time an ulcer is formed, this exhibits an elevated and undermined border and is relatively insensitive and sluggish The lesion is usually solitary and located almost always on the lower third of the leg or the dorsum of the foot

**Differential Diagnosis** Lack of varices and a younger age group help to distinguish stasis ulcer

***Etiology.*** Tropical humid climate, injury or insect bite, and low level of nutrition and sanitation are the usual basic factors

**Treatment** A high protein diet should be prescribed Boric acid compresses locally and penicillin or a tetracycline drug internally are advised

## Dermatitis Repens

This is a deep seated, chronic, progressive disorder, usually involving one or more fingers (Plate 42, C)

**Symptoms** The process usually begins *on a finger near the nail,* and spreads slowly, without any tendency to healing It commonly spreads around the nail *and often undermines* the nail plate The condition is vesiculopustular The affected skin is edematous and crusted In some cases the disorder remains localized to one finger but it usually tends to

involve several areas In rare instances it extends from the fingers or toes to widespread areas of skin

Differential Diagnosis The condition is to be distinguished from *pustular psoriasis* and *fungus infection* of the extremities In the former nothing is to be found on culture, whereas in the latter fungi may be demonstrated The peculiar localization and the insidious, slow progression of the disease are characteristic

Etiology Micrococci may usually be demonstrated but their role is not certain

Treatment In most patients cure is obtained only after considerable effort, using various combinations of local and systemic antibiotic agents X ray therapy is sometimes useful, and occasionally injections of staphylococcus toxoid help A careful check should be made for a possible focus of infection and the patient should be examined for intercurrent disease, such as diabetes Gamma globulin may be tried

## Diphtheria and Diphtheroid Infections

Careful bacteriologic study may show that these infections are not so rare as considered at present While they are potentially systemic, their appearance does not so indicate

Symptoms The clinical expression often simulates impetigo and ecthyma with ***sluggish shallow ulcers*** not responsive to ammoniated mercury and other antibacterial preparations Paronychia is sometimes observed The development of ***a membrane over the surface of a wound*** or ulcer is another variant Constitutional symptoms may or may not be present Paralysis secondary to skin involvement has been described.

Etiology *Corynebacterium diphtheriae*, when present, may be identified on culture There is often a mixed infection with Staphylococcus At times only diphtheroids are found and are considered capable of being pathogenic

Treatment Antitoxin should be given promptly Penicillin may also be administered

## Acne Varioliformis (Necrotica)

(Gk *akme*, a point L *varius*, varying + *forma*, appearance)

Acne varioliformis (necrotica) is a persistent recurrent, pustular disorder which leaves scars similar to those of smallpox

Symptoms The lesions occur characteristically on *the scalp and on the forehead* but may appear on other parts of the face or trunk and occasionally on the extremities The lesions are papulopustules, often become umbilicated eventually become crusted and heal spontaneously leaving a *varioliform scar*

Etiology The condition is thought to be a pyoderma in a highly susceptible individual

Differential Diagnosis Acne vulgaris is seldom localized to the sites of this disorder and does not leave varioliform scars

Treatment. Good temporary results are usually obtained by application of ammoniated mercury ointment, 4 per cent Recurrences are the rule

# Hair Follicle and Sweat Gland Infections

The location of the infection, in the most vulnerable part of the skin is a factor in the chronicity of many of these cases The tendency to recurrence is marked

## Folliculitis

(L *folliculus,* little sack)

Folliculitis is a superficial infection of the hair follicle, usually multiple, caused by the *Staphylococcus aureus*

**Symptoms.** *The extensor surfaces of the arms and legs* are frequent sites (Plate 43, A) The lesions are pustules and they are usually discrete, surrounded by erythema and quite superficial If left alone the lesion gradually desiccates and forms a crust With scratching or traumatization, *the condition may spread further*

**Differential Diagnosis** The resemblance to an *oil dermatitis* is some*times striking* In the latter, *the history of continued exposure to oil and* the negative findings on culture are the main points in differentiation

**Etiology.** This condition is often secondary to some pruritic dermatosis and as such may be termed a complicating or secondary pyogenic disorder It is sometimes seen on the back of the neck and other areas from the rubbing of clothing It is not uncommon over the buttocks during the hot months

**Treatment** The time honored treatment is the application once or twice daily of an ointment containing 3 per cent ammoniated mercury This is mild enough to be nonirritating and is usually strong enough to obtain the desired result Neomycin ointment is an alternative preparation pHisoHex should be substituted for soap

## *Sycosis Vulgaris*

(Gk *sykon,* a fig, L *vulgaris,* common)

*Sycosis vulgaris is a variety of folliculitis observed in the bearded* region in men

***Symptoms*** The follicular, deep seated, erythematous pustules tend to spread slowly over *the upper lip, chin or cheeks,* although in some cases they remain on one site, such as the skin directly under the nose The inflammation involves the interfollicular skin with edema and redness of the part Despite the inflammation, it is *difficult to epilate the hair without pain.*

**Differential Diagnosis** In *sycosis due to fungi* (tinea barbae) the condition is usually unilateral or at least asymmetric, often forming a boggy mass Hairs are readily epilated, usually are decolorized and, on examination, fungi may be demonstrated Follicular pustules secondary *to ingrowing hairs* (pili incarnati) are usually scattered and the buried hair usually may be observed (*see infra*)

**Etiology.** The condition is due to a mixture of pyogenic organisms It is limited almost exclusively to male adults, although a case was observed in a woman with hypertrichosis of the face Direct infection in bar-

ber shops is sometimes responsible, although this direct mode of trans mission is not always demonstrable There is often a draining accessory sinus from which the infection is spread It is said to appear after trauma There is a marked individual predisposition

Treatment Sycosis vulgaris is notably resistant to most forms of therapy Perhaps the best single preparation is ***Quinolor Compound Oint ment*** At present this commercial ointment is still available although its manufacture has been stopped It may be rubbed on both at bedtime and after shaving One may occasionally expect excellent results from the local

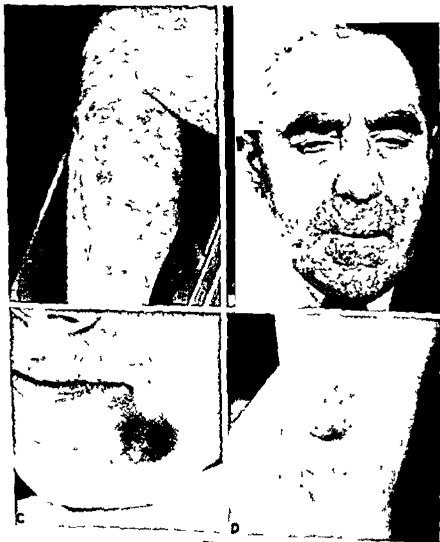



Plate 43

*Pyogenic Infections* A *folliculitis* the legs a a

application of neomycin In cases of long standing in which local measures are ineffective, one of the *antibiotics* should be administered either parenterally or by mouth, preferably preceded by sensitization tests *Roentgen therapy* using 75 r once weekly for several weeks is often effective A possible focus of infection should be sought, particularly in the upper part of the respiratory tract and in the accessory sinuses Sometimes shaving with an electric razor is helpful Prophylactic daily applications of neomycin ointment or similar preparations may be necessary to avoid recurrence

## Pili Incarnati

(L *pilus*, hair, *incarnatus*, in the flesh)

Pili incarnati, or ingrowing hairs, is a common disorder peculiar to the male beard

*Symptoms* The *lesion is a follicular pustule in the bearded region*, containing a buried hair which, when released, may be curled On examination of the beard the hairs may be observed to leave the skin in an irregular pattern

**Etiology.** The disorder is caused by shaving too close, with the result *that the angulated hairs are trapped under the keratin*

**Treatment** The affected hairs should be released but not epilated If the condition recurs, the patient should try shaving only "with the grain" or use an electric razor In recalcitrant cases, the follicle of the offending hair may be destroyed by electrolysis

## Furunculosis

A furuncle (boil) is an acute, localized, follicular, staphylococcal infection followed by central necrosis (Plate 43, C) A carbuncle is a group of boils organized into one lesion

*Symptoms.* There may be only *a solitary* lesion or successive lesions in crops At first the color of the skin surrounding the infected follicle is bright red On palpation the ***area is hard*** and there is considerable tenderness Following central suppuration and ***formation of a core*** (which after a few days may be extruded spontaneously or with gentle manipulation), the skin becomes dusky red and the surrounding tissues soften A boil may occur on any hairy site but is seen most commonly on the ***back of the neck, over the buttocks,*** and ***on the wrists and ankles*** When boils develop ***on the middle third of the face they should be considered a threat to life,*** because the infection may spread back through the venous circulation to the brain Infection involving a number of adjacent follicles, is known as a carbuncle After the healing of both boils and carbuncles, a scar remains in situ

**Differential Diagnosis** *In most cases the diagnosis is self evident* When the middle third of the face is affected by a pustular infection one should anticipate the diagnosis and immediately institute therapy If the axillae become involved in an inflammatory pyoderma, the infection may localize in the apocrine sweat glands in this region (see Hidradenitis Suppurativa, *infra*) This localized infection is much more stubborn to treat and cure

Etiology A solitary boil may be considered an accident often resulting from trauma such as epilation of a hair in the nostril use of adhesive plaster or squeezing a comedo When a series of furuncles or a carbuncle develops this indicates possible *impairment in the general health* or some underlying disorder such as diabetes However investigation is seldom fruitful

Treatment 1 *Surgical interference is usually contraindicated* It is seldom necessary or advisable to incise a boil or a carbuncle Such intervention is usually followed by spreading of the infection and the development of additional lesions The resultant scar may be conspicuous It is better therefore to apply *wet, hot fomentations* consisting of boric acid and salt solution If the boil is on an extremity and there is not too much pain this treatment may suffice until the core has become extruded or softening has taken place

2 Some form of *antibiotic therapy is often indicated*, the usual drug being repository type penicillin 600 000 units once daily until the condition is controlled Tetracycline 250 mg four times daily is an alternative

3 When the middle third of the face is involved surgical *interference* is definitely contraindicated In such cases *administration of* an antibiotic agent is mandatory and it is best to give two simultaneously such as penicillin 600 000 units intramuscularly once daily *and a* tetracycline drug 250 mg four times a day

4 *In all patients with furunculosis urinalysis* should be *performed* and the patient examined carefully for a *possible focus* of infection or a systemic *disorder*

5 When the axillae are involved *roentgen therapy 150* r filtered through 3 millimeters of aluminum *repeated* every two weeks for three treatments may be useful

6 Occasionally when no cause can be *discovered* for the repeated recurrence of boils a course of *staphylococcus toxoid together* [illegible] eralized

7

boils sl [illegible] use of the *soap substitutes* in which is incorporated hexachlorophene *such as pHisoHex* and a borated talc may be prescribed for application after bathing

8 *If* boils recur only in *certain sites* as the back of the neck an ointment containing 5 *per cent ammoniated* mercury may be prescribed for application at bedtime as a *prophylactic*

## Hidradenitis Suppurativa

(Gk *hidros* sweat + *aden* gland L *suppuratio* suppuration)

Hidradenitis suppurativa is a *resistant* infection of the apocrine glands which is often confused with *furunculosis*

*Symptoms* In most instances the disorder is observed in the axillae (Plate 43 D) although *lesions* may occur in the female breast, on the genitalia and in the perianal region A solitary deep seated nodule develops into an abscess which may resolve rupture spontaneously or re

quire incision In most cases, new lesions continue to develop, and finally there is a chronic deep seated process, often with discharging sinuses and considerable scar tissue

**Etiology.** The apocrine sweat glands are infected with different species of Staphylococcus and Streptococcus

**Treatment** Antibiotic therapy should be given a thorough trial Surgical intervention should be postponed unless fluctuation is present In old *neglected cases, surgical excision of the entire area is sometimes the* only effective method Locally wet hot packs may help X ray therapy may be useful in conjunction with chemotherapy Testosterone is occasionally helpful

# Invasive Infections

Because of the acute symptoms, most patients with invasive infections do not delay in presenting themselves for medical advice It is equally important for the physician to catalog the infection accurately and institute prompt and vigorous therapy The ***decision as to hospitalization*** should be based on the condition of the patient and on the type of infection, as well as its extent, ***cost should not be the paramount consideration.***

## Acute Paronychia

(Gk *onyx*, nail)

Acute paronychia, or whitlow, is a rapidly developing, painful red swelling around a nail

**Symptoms.** Infection follows a break in the continuity of the tissues, usually due to injury The process may be localized to one lateral nail fold, or to the proximal fold but may spread entirely around the nail (surgical run-around) If neglected, the infection further extends under the nail plate and occasionally lymphangitis or cellulitis develops

**Differential Diagnosis** Paronychia due to *Candida albicans* develops more slowly and is not so painful, and free pus is absent The differential diagnosis is important, as a monilial paronychia should not be incised

**Etiology** A careless manicure or a penetrating or abrasive injury opens the pathway for species of Staphylococcus or Streptococcus

**Treatment** A combination of surgical incision and administration of antibiotic drugs is the best procedure Hot, wet packs are helpful

## Lymphangitis and Cellulitis

In both lymphangitis and cellulitis the pyodermic process has spread from the skin to underlying tissues

*Symptoms* *The extremities are chiefly affected* the lower extremities to a lesser degree than the upper If the process is contained in the lymphatic channels, the ascending inflammation is evidenced by ***red streaks*** The skin in the area *is hypersensitive and some increase in warmth may* be noted Lymph nodes draining the part become enlarged and tender ***The development of cellulitis is evidenced by more diffuse redness and***

swelling (Plate 44 B) At the onset constitutional symptoms may be mild and fever slight If the condition is neglected toxic manifestations soon occur the degree of fever increases and the patient may be seriously ill Following repeated attacks of lymphangitis narrowing of the lumen of the lymph channels may result in chronic lymphedema (elephantiasis)

Etiology There may be a traumatic break in the continuity of the skin or a chronic focus may antecede the spreading infection Recurrent lymphangitis of the legs is usually due to a *focus between the toes* Lymphangitis and cellulitis may complicate any exudative skin disease



Plate 44

*Pyogenic Infections* A localized deep-seated pyoderma after injury often resulting in lymphangitis B *cellulitis* a dangerous condition because of the potentialities of spread C *erysipelas* abrupt onset of erythematous edematous lesions accompanied by systemic symptoms D *erysipeloid* the associated symptoms are usually mild

**Treatment** Antibiotic therapy should be promptly and vigorously administered Hot wet packs help Elevation and immobility of the limb is indicated Chronic fissures, such as *on the interdigital toe-webs, should* be treated, ammoniated mercury ointment (3 per cent) is often effective

## Erysipelas

(Gk *erythros,* red + *pella,* skin)

Erysipelas is a rapidly spreading acute infection with constitutional symptoms (Plate 44, C)

**Symptoms** The first evidence of the condition is usually a chill followed by a rise in temperature Headache, nausea and vomiting, and other constitutional effects are frequently observed early in the course The eruption is evidenced by appearance of a raised area of erythema usually spreading rapidly, with an active advancing border Vesiculation may appear The face is a common location The next most common areas are the feet No immunity is produced by an attack and recurrence is frequent Complications, including pneumonia and/or nephritis, are not uncommon

**Differential Diagnosis** Eczematous diseases do not produce the severe constitutional symptoms seen with erysipelas

**Etiology.** The disease is caused by invasion of the superficial lymphatics of the skin by *Streptococcus hemolyticus* Infection is thought to depend on trauma, but the history of such is not always obtainable Elderly persons are particularly susceptible

**Treatment** Penicillin, a tetracycline drug or a soluble sulfonamide should be administered at an early stage of the disease If a rapid response is not achieved, more than one remedy should be simultaneously used Sensitivity tests may also be useful Supportive measures are always indicated

## Erysipeloid

(Gk *erythros,* red + *pella,* skin + *eidos,* resemblance)

Erysipeloid, a comparatively mild superficial infection of the skin, is due to the bacillus of swine erysipelas (Plate 44, D)

**Symptoms** The condition begins and continues *as an erythematous,* slowly spreading eruption confined usually to *the fingers or backs of the hands* The color is deep red and the margin is fairly abrupt The affected skin may be pruritic *Occasionally the process may be more acute,* with an associated low grade lymphangitis and mild constitutional symptoms Rarely, a generalized erythematous eruption with fever occurs Arthritis and endocarditis have been observed

**Etiology** Most patients are fish or meat handlers It is not infrequent in commercial fishermen in whom it may be a cause of disability It is *occasionally seen in housewives* and in individuals handling animal material such as hides

**Treatment** Penicillin and the tetracycline drugs are usually strikingly effective and are preferable to the sulfonamide drugs

*Chapter 10*

# Fungus Infections

THE SKIN is particularly susceptible to invasion by that select class of pathogenic microorganisms known as fungi These vegetable parasites are closely related to bacteria, both springing from common ancestors, the Fungaceae It is customary and useful to divide the diseases caused by pathogenic fungi into two broad groups (1) ***superficial fungus infections,*** in which the skin and its appendages are solely or predominantly involved, and (2) the ***deep fungus infections,*** in which the invading microorganisms involve the skin deeply and also tend to metastasize to other organs of the body Diseases of the latter group constitute a potential threat to life Most of the fungi pathogenic to man produce a distinctive clinical pattern, with certain exceptions, so that the causative agent may be suspected For this reason fungus infections offer a satisfactory and rewarding field for study The available laboratory techniques are rather simple and yet adequate, and many practicing dermatologists use them routinely in their private offices as well as in their clinic work On the whole, therapy is satisfactory, although there is still room for improvement in the management of many of the mycoses Some of the deep invasive fungi still cause fatalities In this small but important group early *recognition* and *prompt* institution of treatment are vitally necessary

## Superficial Fungus Infections

The vulnerability of certain topographical *regions or* certain structures of the skin to various fungi has resulted in the *differentiation* on clinical grounds of types of superficial fungus disease *Consequently* one refers to tinea capitis (scalp), tinea corporis (smooth skin), dermatophytosis (feet, hands, and nails), tinea *cruris* (groin), tinea barbae (male beard), moniliasis (intertrigo, paronychia, etc ), and tinea versicolor (a brown, scaly rash) The chief features of these diseases will now be discussed

**Treatment.** Antibiotic therapy should be promptly and vigorously administered Hot wet packs help Elevation and immobility of the limb is indicated Chronic fissures, such as on the interdigital toe webs, should be treated, *ammoniated mercury ointment* (3 per cent) is often effective

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**Etiology** Most patients are fish or meat handlers It is not infrequent in commercial fishermen in whom it may be a cause of disability It is occasionally seen in housewives and in individuals handling animal material such as hides

**Treatment.** Penicillin and the tetracycline drugs are usually strikingly effective and are preferable to the sulfonamide drugs

2 *Microscopic and cultural examination* Infected hairs are examined under the microscope after partial digestion in a 10 per cent solution of sodium hydroxide fungus elements if present will be recognized Other hairs are planted on the surface of a dextrose agar slant and after five to eight days a characteristic individualistic growth will appear

Treatment 1 When inflammation is present (chiefly in *Microsporum canis* infections) many patients respond well to application of 6 per cent ammoniated mercury ointment or to various other local preparations con

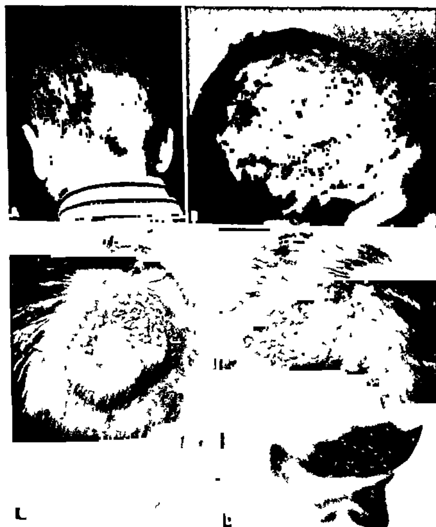


Plate 45

*Tinea Capitis* A d e to M ... and lusterless B ... animals, from w ... *Microsporum gy* ... permanent loss o ... caused by favus ... D atrophy of scalp and

## Tinea Capitis

(L. *tinea*, gnawing worm)

Fungus disease of the scalp, known commonly as *ringworm*, is the usual cause of loss of hair in children.

**Symptoms.** Invasion of the hair follicle *is preceded by some branny scaling over the surface of the scalp.* The disease may be caused by one of three *species of fungi, each of which invokes a distinctive clinical picture.*

1. *Invasion with Microsporum audouini.* This produces the classic *gray-patch type* (Plate 45, A). A mantle of spores envelops the root of the affected hair, causing it to become brittle and decolorized, and finally to break above the surface of the scalp. When numerous hairs are involved this produces a *patchy appearance,* which at first glance looks like a bald area. Actually, however, *stubby hairs* are present. The skin in the involved area may be *slightly inflamed,* and the surface is usually scaly. The disease tends to progress gradually, and eventually multiple areas are present.

2. *Microsporum canis type.* In this variety the mantle of spores surrounds the hair as noted above, but in addition there is usually much *more inflammatory reaction in the skin, sometimes enough that the affected* hair is shed spontaneously (Plate 45, B). Occasionally also a boggy in*filtration, known as kerion, will develop, although more common with Microsporum gypseum* (Plate 45, C). Both types tend to resolve spontaneously, owing to severity of the inflammation (with epilation of the infected hair), and the development of immunity.

3. *The endothrix type.* Several species in this group *invade the hair shaft,* weakening it so that the hair tends to break off or causing its actual epilation. In infection by one member of the group an offensive crusting reaction (scutula) appears on the scalp. This response is so characteristic that it is often considered *a distinct disease (favus)* (Plate 45, D).

**Etiology.** Tinea capitis is seen chiefly in children in the preadolescent period, with boys affected five times as frequently as girls. The disease has been present in epidemic form at some time in virtually every city in the United States. Infection is spread usually through contact, from child to child, but also through the medium of inert material, such as the plush on the back of a movie theater seat. The barber shop is also blamed. *Microsporum canis* is capable of producing fungus disease in pets, such as kittens and puppies. As in humans, adult animals are relatively immune.

***Diagnosis.*** To explain the apparent loss of hair in a child, tinea capitis should always be the presumptive diagnosis. Fortunately, confirmation *is usually simple, being accomplished in one of two ways.*

1. *The fluorescence test.* This consists in inspection of the scalp with filtered ultraviolet rays (*so called Wood light, or black light, the same rays* used to obtain fluorescent effects in stage productions). In both the first and the second type of infection, *the infected hair fluoresces a light bright* green. Well over 90 *per* cent of the cases fall into these two groups. Unfortunately, hairs infected with a member of *the third group as a rule* do not fluoresce. Consequently the test is not a certain method of eliminating the possibility of fungus disease.













Plate 46

*Tinea Corporis* A solitary ringed lesion [illegible]
spread annular an[illegible]
lesions [illegible]

taining such drugs as sulfur, iodine, thymol, undecylenic acid, or salicylanilide

2 *Many patients require x ray epilation*, particularly when the infection is caused by *Microsporum audouini* or one of the endothrix Trichophytons The action of the x rays is physical and not fungicidal, causing a temporary defluvium during which time the infection is also carried away The removal of scalp hair with x rays is a ***highly technical procedure*** which must be undertaken with scrupulous care and with knowledge of the possible dangers involved The margin of safety is not great enough to allow for a major error in judgment, or for carelessness Nevertheless, it is reassuring that in a span of over thirty years, among many hundreds of patients treated both personally and by various technicians and younger doctors, I have not encountered one case of permanent epilation Cure is not only determined on clinical grounds but must be substantiated by negative fluorescence test and by negative cultures

3 *The doctor must warn the parents* of the contagiousness of the disease and of their responsibility in this connection In some communities the child is taken out of school, in others it is considered best to leave the child in school under close supervision In any case, ***the infected youngster should wear a linen cap at all times***, and rough games should be prohibited He should not be allowed to attend motion picture theaters where his head will rub up against the seat, nor should he go to a barber shop ***All other members of the family, particularly children, should be examined*** under filtered ultraviolet rays (Wood's light) for a possible beginning scalp infection This same modality is used to screen whole classes or groups of children who are going to camp, although there may be an occasional error if an endothrix infection is present All infected children must be removed from possible contact with noninfected children *Prevention of infection* may be furthered by a shampoo immediately after each visit to the barber shop *The inflammatory types of tinea are often due to contact with an infected animal, usually a pet* It would be well if all pets could be examined under a Wood light before purchase

## Tinea Corporis

Superficial fungus disease of the smooth skin, tinea corporis is also commonly known in lay circles as 'ringworm (Plate 46)

Symptoms The lesions tend to be [illegible] and of various sizes Typically, they are eryth[illegible] and with a tendency to clearing in the c[illegible] area is uniform At times several concer[illegible] changes in the immune state or in the available nutrition In other individuals, the infection may invade deep parts of the skin, forming a granuloma (tinea profunda) There is always *a definite border, often vesicular in character* The lesions are usually few in number, occasionally, however an almost total lack of resistance occurs and, in such patients as many as one hundred or more may appear within a very short time This condition *may be associated with tinea capitis* in the same patient




Plate 46

Diagnosis At times there is some resemblance to eczema to seborrheic dermatitis or to pityriasis rosea In all instances the causal fungus should be demonstrated in scrapings and in culture The fluorescence test *is of no help* in tinea of the glabrous skin unless lanugo hairs are infected when the same light green luminescence observed in tinea capitis will *be noted*

Etiology The organism most commonly involved is *Microsporum canis* Most of the patients are children or mothers whose children already have one form of the infection The disorder is often acquired from a pet *such* as a kitten or puppy

Treatment The treatment usually consists of the application once or more times daily of a fungicidal ointment A salve containing 3 per cent salicylic acid and 5 per cent ammoniated mercury is often employed Compound ointment of benzoic acid (Whitfield's ointment), one fourth to one half strength is another useful preparation It is well to watch carefully for unwanted reactions Treatment must be continued until every vestige of the disease has been eradicated The scalp of the patient should always be *examined for evidence of tinea capitis*

## Dermatophytosis

Dermatophytosis is a fungus infection of the feet and hands usually *beginning as intertriginous invasion of the toe webs but later often spreading* to the soles and to the groin the hands, and the nails

*Symptoms* In the *inflammatory, or Trichophyton mentagrophytes, type*, the condition often begins on the sides of the toes and webs as *interdigital maceration* and scaling (Plate 47) There may be considerable erythema vesiculation and soreness followed by fissuring of the affected skin In many instances the disorder remains localized to the interdigital webs and sides of the toes In others it travels *to the soles* and less often to other parts of the feet Absorption of formed elements may be reflected by the development of vesicles on the *palms and sides of the fingers*, and occasionally by erythematous vesicular eruptions on the extremities and trunk When the nails become infected there is a considerable *inflammation in the nail bed* This results in separation of the nail to a greater or lesser degree In severe cases acute dermatophytosis may cause partial or complete disability because of the associated edema and sometimes secondary infection and inflammation

In the *chronic type due to Trichophyton rubrum* the disorder may also begin as an interdigital infection but with much less inflammation (Plate 48) *The nails are often affected early* and reveal yellow opaque brittle involvement The disorder is *typically seen on the soles,* producing erythema scaling and thickening The dorsum of the foot is usually spared The disease progresses slowly As the condition spreads *one hand* may be involved Erythematous plaques commonly occur over the buttocks (Plate 49) and more rarely on *various other parts of the body Vesiculation is rare* except in the tropics or during extreme summer heat The initial infection may show a vesicular *tissue response* this soon disappears

Etiology Dermatophytosis is not often seen in children and is most common in young adults men being chiefly affected It is more apparent during the summer Hyperhidrosis is a usual finding The fungi may remain viable in a dry state away from the body for many weeks or months The chief problem in prophylaxis arises from presence of the disease in a minimal form with the individual unaware of his infectiveness The two organisms chiefly responsible are not known to infect animals

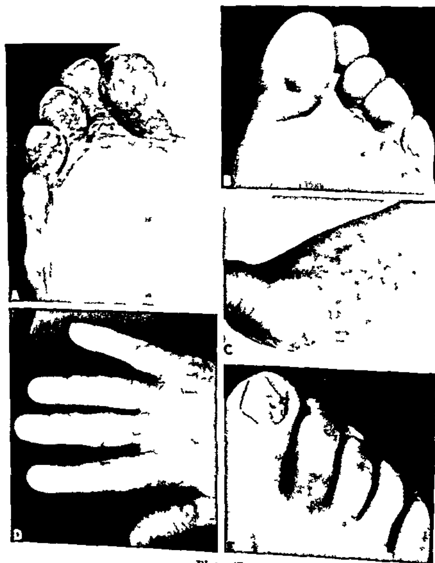



Plate 47

*a Acute dermatophytosis due to Tri...*

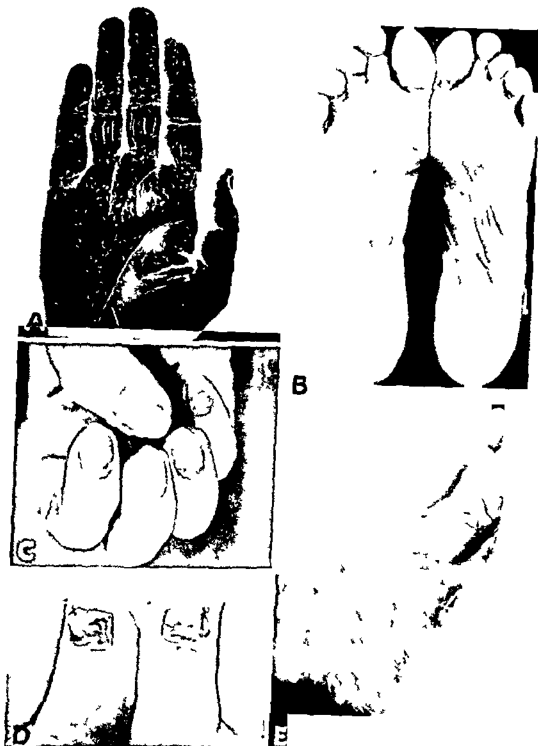



Plate 48

*Chronic dermatophytosis due to Trichophyton rubrum* a challenging problem in therapeutics A unilateral well circumscribed dull red scaly thickened plaquey eruption B the toes heels and margins of the sole are chiefly involved C infection of the proximal finger nails from a manicure D toe nails are yellow friable and opaque E classic picture with chief involvement in skin with thick keratin layer

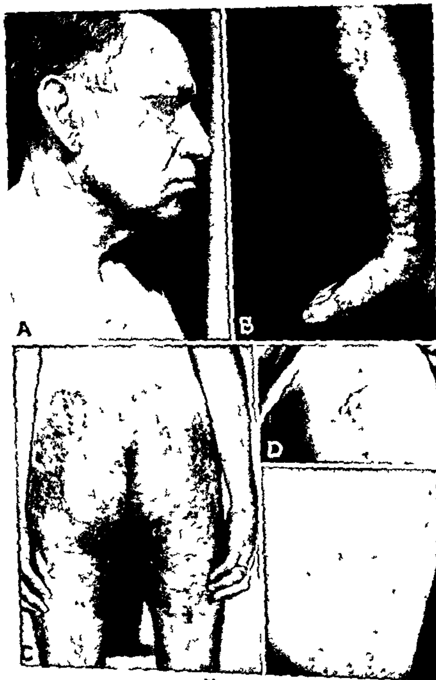



Plate 49

*Dermatophytosis due to Tr bonk* t
are typ cal th sharp defin
sof ement of buttocks and
immediate wheal reaction v
*T rubrum* infect ons E lo
may be part ally responsible

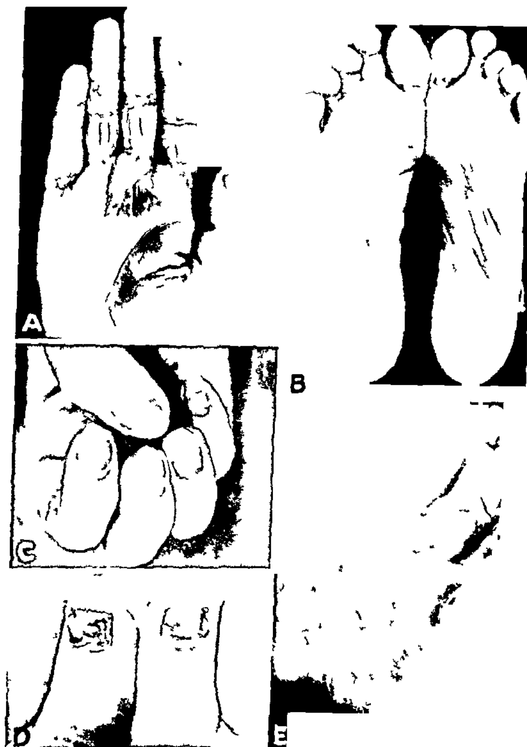



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itant care should be taken that not even a trace reaches the eyelids or severe conjunctivitis may result

## Tinea Cruris

As the name implies the groin is usually the site of predilection for development of lesions of tinea cruris (Plate 50)

Symptoms The eruption is usually *bilaterally symmetric, involving* ... (Plate 50 A) The margin is abrupt and the skin ... here is usually moderate ... without vesiculation are



Plate 50

*Subacute dermatophytosis due to Epidermophyton floccosum.* A eruption is bilateral symmetric sharply demarcated B discrete lesions on foot. C axillary involvement D ringed lesion on sole

**Differential Diagnosis** It should always be kept in mind that ***not all eruptions on the feet are caused by fungi. Contact dermatitis,*** due to shoe leather dye, nylon, soap, or other allergens, is a *much more likely diagnosis* for eruptions on the dorsa of the feet Maceration between the toes may be simulated by the mucous patches of ***secondary syphilis.*** The disease known as ***pustular psoriasis*** presents deep seated pustules, this disorder progresses very slowly and the pustules are found to be sterile when cultures are made In ***dysidrosis,*** the vesicles are scattered over the *soles* In the chronic form of dermatophytosis, in which the skin is dry, reddened, and scaly, the resemblance to ***psoriasis*** and to ***neurodermatitis*** is sometimes striking In some cases the only conclusive method of diagnosis is to culture and find the fungus or to fail to find it on repeated culture A number of conditions ***simulate fungus infection of the nail.*** At times ***psoriasis is a close mimic,*** and one is then forced to rely on the presence of other more typical lesions of psoriasis elsewhere or on the presence or absence of a fungus in *scrapings from the involved tissue*

***Treatment.*** The treatment of dermatophytosis depends to a great extent on the clinical type of the disease An infection by *Trichophyton mentagrophytes* confined to the interdigital webs and sides of the toes may be treated by application of 3 per cent salicylic acid in alcohol at bedtime and of a *10 per cent boric acid foot powder in the morning* If considerable inflammation is present the feet should be soaked in a solution of potassium permanganate, 1 8,000, for 30 minutes morning and night In highly inflammatory states, treatment may be restricted to use of a paint such as 1 per cent gentian violet in water Preparations containing certain fatty acids, particularly undecylenic and propionic acids, are often useful and relatively non irritating Overtreatment is a common mistake If the disease spreads to contiguous areas of skin or if the hands become involved, the use of superficial roentgen therapy *for its nonspecific effect on inflammatory* tissue should be considered

***Treatment of the chronic form due to Trichophyton rubrum is not very satisfactory, and cure is difficult.*** Remedies in strong concentration are necessary and must be changed frequently When a solitary finger nail is infected, surgical evulsion may be performed with good prospects for cure With multiple infected nails particularly when the adjacent skin is involved as well, surgical evulsion is not practical and usually is not curative *With* the latter problem, the diseased portion must be mechanically removed After this partial evulsion the remainder of the nail plate is treated with dyes and ointments, usually for several months Treatment must not be terminated before every focus has been cured The ointment most commonly used in the treatment of this form of dermatophytosis is compound ointment of benzoic acid (so called Whitfield's ointment), consisting of 6 per cent salicylic acid and 12 per cent benzoic acid in wool fat (5 per cent) and white petrolatum Asterol tincture and ointment, Verdefam and Onychophytex *may be found helpful* Later, chrysarobin (1 per cent) or resorcin (2 per cent), may be added Since chrysarobin is an extreme ir-

ondarily altered due to interference with their nutrition and will then show irregularities of the surface The nails also may be invaded by *Candida albicans* and this is evidenced by ***dark green stripes along the lateral margins of the nail plate*** The ***intertriginous lesions*** are erythematous scaly, often edematous and sometimes covered by a purulent exudate Small *satellite lesions* of similar type are characteristically seen beyond the advanc [illegible]

rather

monilia



Plate 51

***Tinea barbae due to Trichophyton*** –
The hairs in the lesion epilate readily [illegible]
sycosis in which traction on or epilation [illegible]
difficult as it is in a normal control.

present in the axillae (Plate 50, C), on the intertriginous areas of the feet and on the soles (Plate 50, D) The diagnosis may be readily confirmed by scraping and culture

**Etiology.** The cause is *Epidermophyton floccosum* Epidemics in camps and schools, and among naval personnel have been reported

**Treatment.** An effective treatment consists in nightly application of an ointment containing 3 per cent salicylic acid and 6 per cent sulfur precipitate Another prescription sometimes used is 10 per cent sodium hyposulfite solution Overtreatment should be avoided, and the patient should be asked to report any evidence of intolerance Patients should be examined carefully for foci on other skin areas

## Tinea Barbae

*Fungus infection of the male beard, tinea barbae, is not common but* is distinctive and should not be overlooked (Plate 51)

**Symptoms** The manifestations are inflammatory and usually *on one side of the face* In most instances the infection is sharply localized and is phlegmonous Hairs in the infected area epilate without any difficulty It should be recalled that *sycosis barbae, a bacterial infection* of the beard is usually symmetrically distributed, and the hairs are epilated only with difficulty Hairs should always be examined microscopically and culturally in order to demonstrate the fungus

**Etiology** Tinea barbae usually occurs as a result of an infection acquired from a domestic animal The causal fungus is most often *Trichophyton mentagrophytes*

***Treatment*** *In the presence of a severe inflammation treatment* should be approached cautiously It is often best to apply hot wet compresses containing 3 per cent boric acid and 2 per cent sodium chloride for at least one hour four times daily Hot sulfurated lime solution diluted 1 50 is even more potent and should be used with due caution Simple external heat is also valuable Care should be taken not to use strong ointments The infected hairs may be epilated manually Occasionally x ray therapy is indicated and *intravenous typhoid vaccine to induce fever is reputedly* effective

## Moniliasis

The manifestations of moniliasis are numerous The causative organism is *Candida albicans*

**Symptoms** The disease may involve only local areas of skin, or occasionally *it may be systemic Certain areas of skin particularly* susceptible to the disease include the ***paronychial tissues*** and the ***intertriginous areas*** on many parts of the body, *such* as webs of the fingers, the umbilicus the commissures of the mouth, the axillary folds and the inframammary region Invasion of the paronychial tissue by *Candida albicans* is responsible for the disease known as ***chronic paronychia***, which is manifested by tender swelling and redness of the tissues around the nail Sometimes a drop of pus may be squeezed out under the nail fold The nails may be sec-

ondarily altered due to interference with their nutrition and will then show irregularities of the surface The nails also may be invaded by *Candida albicans*, and this is evidenced by *dark green stripes along the* [illegible] *of the nail plate* The intertriginous *lesions* are erythem

advanc [illegible]
rather
monili



Plate 51

*Tinea barbae due to Trichophyton ment* [illegible]

Th [illegible]
s
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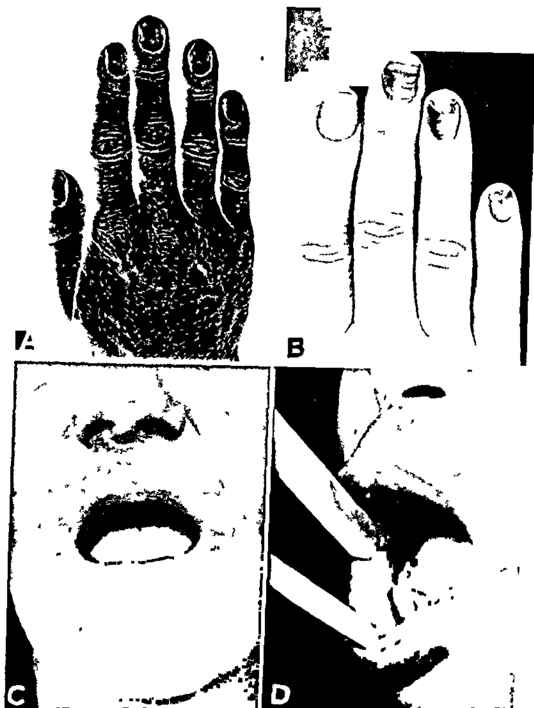



Plate 52

*Cutaneous Moniliasis* A *chronic paronychia* seen chiefly in middle aged house wives waiters bartenders and others whose hands are frequently wet B *onychomycosis* usually secondary to paronychia *Candida albicans* may also invade the sides of the nail producing dark stripes C *perleche* a form of mycotic intertrigo D thrush in an adult is usually a by product of tetracycline therapy

buccal mucosa and may be a serious affliction It is usually acquired from

prospect of permanent cure becomes uncertain The lungs are more apt to become infected than any other internal organ There are rare instances of meningeal involvement, and the heart valves have also been affected in a few reported cases The usual clinical picture of moniliasis is fairly

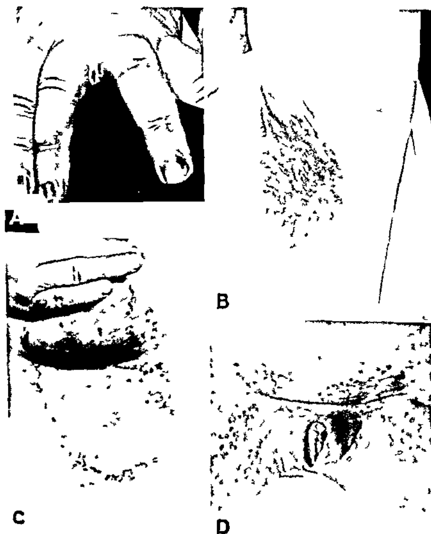



Plate 53

*Cutaneous Moniliasis* A eros the hand B axillary lesion plaque C, inframammary pendulous breasts D a not

typical, and little difficulty should be experienced in making the diagnosis In all cases the patient should be studied by cultures and the organism demonstrated before therapy is started

**Differential Diagnosis.** Chronic paronychia should be carefully distinguished from *surgical paronychia* (a pyogenic infection) In the latter condition, the onset is much more abrupt, the inflammation more acute, and the process usually limited to one finger There is also a history of injury At times the intertriginous lesions must be distinguished from other fungus eruptions, such as *dermatophytosis* This is particularly true when the feet are involved In the axillary and inframammary regions, *psoriasis* and *seborrheic* dermatitis are sometimes difficult to distinguish The absence of other evidence of these diseases, particularly on the scalp, is helpful The presence of satellite lesions beyond the margin of the plaque also favors the diagnosis of moniliasis

**Etiology.** The causative microorganism, *Candida albicans,* is seldom if ever found on the normal skin but is a common inhabitant of the gastrointestinal tract The incidence of infection increases with age Many patients are overweight, and diabetes would appear to be a definite predisposing factor Housewives, waiters, and bartenders are prone to develop the disease on the hands This is thought to be due, in part, to a lowering of resistance due to contact with soapy water Administration of tetracycline and other antibiotics may favor development or dissemination of the disease (Plate 52, D)

**Treatment** 1 In all forms of moniliasis of the skin it is necessary to discontinue the use of soap In most cases one of the commercial soap substitutes may be used Housewives with the disease should be instructed in the use of cotton and rubber gloves, and should use them when washing dishes, scrubbing floors, etc

2 If the patient is overweight, a low caloric, low carbohydrate diet should be given The urine should be tested, particularly for sugar If there is any suspicion of diabetes, a glucose tolerance test should be done

3 *Gentian violet* (1 per cent, aqueous) is one of the most effective drugs for local application It is customary to paint this on once or twice daily This is not irritating in any way Another favorite is *ammoniated mercury,* incorporated in a grease and not exceeding 5 per cent in strength With considerable local inflammation, the application of 3 per cent boric acid wet dressing is often well tolerated

4 Mycostatin ointment is helpful in the localized forms Tablets of the same drug in a dose of 500 000 units, three or four times daily will reduce the census of Candida in the gastrointestinal tract, the drug is not absorbed The drug is also available in a suppository for vaginal [illegible]

[illegible] seems to be helpful, particularly [illegible] of the saturated solution, three times daily, with gradual increment

6 X ray therapy is useful in chronic paronychia and in localized intertriginous lesions This is given once weekly in a dose of 75 r unfiltered, for four to six treatments

, should be caution is

## Tinea Versicolor

Tinea versicolor (Plate 54) is the most superficial and inconsequential of the fungus diseases




Plate 54

*Tinea Versicolor* A typical superfic

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5 At times potassium iodide internally seems to be helpful, particularly in the systemic form The dose is 5 drops of the saturated solution, three times daily, with gradual increment

6 X-ray therapy is useful in chronic paronychia and in localized intertriginous lesions This is given once weekly in a dose of 75 r unfiltered, for four to six treatments

other subcutaneous swellings from which additional sinus tracts are formed If the condition is untreated many other organs of the body may finally become affected and the outlook is grave In *mycetoma*, deep seated sinus tracts similar to actinomycosis are present on the feet or more rarely on the hands

**Etiology** The fungus chiefly involved is *Actinomyces bovis* This organism which is the cause of lumpy jaw in cattle has been isolated from carious teeth and from diseased tonsils Patients are frequently adult males Trauma may be necessary to initiate the disease

**Diagnosis** The disease is sometimes *confused with tuberculosis* and other infections The diagnosis of actinomycosis should be confirmed by both microscopic examination and culture For microscopic examination a drop of pus from a sinus is placed on a clean slide, covered by a cover slip and examined without stain The so called sulfur granule may be demonstrated with a palisade layer of hyphae at the periphery of the granule Since in one form of actinomycosis granules may not be demonstrated both aerobic and anaerobic cultures should be routinely performed Special media are required

**Treatment** 1 As soon as a positive (laboratory) diagnosis is made, the patient should be placed on therapy with both *penicillin* and *Gantrisin*, with 600 000 units of repository type penicillin daily for at least three weeks and 2 to 3 gm of Gantrisin daily for *several months* Response to treatment varies with the individual but with this regime the *prognosis* is good unless the case has been flagrantly neglected

2 Hot fomentations using diluted sulfurated lime solution are *helpful*

3 Surgical intervention is rarely necessary

4 X ray therapy (filtered) is a useful adjunct

## Sporotrichosis

Sporotrichosis tends to remain localized to the *superficial* lymphatics producing at intervals granulomatous ulcerative lesions (Plate 55 C)

**Symptoms** The *initial lesion* is *chancre like* and usually appears on an exposed area of skin particularly *on the hand* (fingers) Occasionally the face is involved The lesion is granulomatous finally softens and may present a central ulceration *Subsequently* other subcutaneous swellings appear proximally In a well developed case successive lesions form a *chain of subcutaneous granulomatous ulcers* Unless neglected the condition is almost always unilateral

**Differential Diagnosis** In a well developed case the clinical features are distinctive Early in the course when only one granulomatous lesion is present *tuberculosis syphilis, tularemia*, etc may have to be [illegible] as possible [illegible] slowly is sl[illegible] there is a s[illegible] the dark field examination is positive and possibly also the serologic test for syphilis Lack of systemic symptoms rules out tularemia The fungus is not readily demonstrated in fresh prepa

**Symptoms.** The causative fungus invades only the most superficial part of the skin and produces a *pigmented, scaly, slightly inflammatory eruption* in patches and in large configurate areas The eruption is seen *chiefly on the trunk.* There may be slight pruritus In summer the color of the involved areas becomes much darker, whereas *in winter it may* pale out to yellowish and be barely distinguishable from the normal skin This eruption also has the unique characteristic of being fluorescent under Wood's light A troublesome complication *is the development of pseudo achromic areas* (Plate 54, C, D) after exposure to ultraviolet rays The mantle of spores in the patches of tinea versicolor protects the underlying skin and the result is a contrasting pigmentary effect, with light skin under the patches of tinea and tanned skin in the surrounding areas which were unprotected by the disease This undesirable complication becomes apparent when the skin exfoliates

**Differential Diagnosis** The eruption is usually distinctive Among the laity there is a widespread belief that the condition is *"liver spots"*

**Etiology.** The causative fungus is known as *Malassezia furfur* There is marked variation in individual susceptibility It is thought that most of the spread is through infected clothing, towels, etc

**Treatment.** Almost any type of mild fungicidal preparation will be effective A satisfactory preparation is 10 per cent aqueous solution of sodium hyposulfite, applied *once daily after the bath If this treatment is* used carefully and faithfully, most patients respond readily and are apparently cured within three or four weeks To avoid missing part of the eruption *which may not be apparent on casual inspection, the patient should* be examined under the Wood light both before and after treatment has been applied Recurrence is not uncommon after apparent cure

## The Deep or Invasive (Potentially Systemic) Mycoses

Although these diseases are not of common occurrence, it is neverthe*less important for all physicians to be aware of their characteristics, since* an early diagnosis usually means a cure, whereas if the patient is *neglected* the prognosis is much less certain Fortunately the pattern of these diseases is not difficult to recognize, provided the possibility of their occurrence is kept in mind

### Actinomycosis

*Actinomycosis should always be considered* as the reason for a draining sinus which cannot be explained otherwise (Plate 55, B)

**Symptoms** In approximately 50 per cent of the cases the disease begins *around* the head or neck The angle of the jaw is a favorite location The disease may also be noted in the region of the anus, in the abdominal wall, or over the thoracic cage In *all* these locations the *same sequence of* events occurs A subcutaneous swelling is followed by formation of ***sinus tracts,*** some of which reach the skin Pus is extruded through the sinus tracts and later *discharges through the surface of* the skin or forms

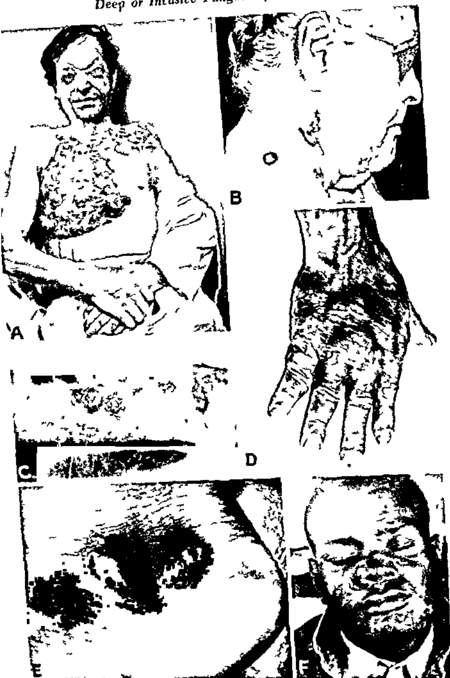



Plate 55

*Deep or Invasive Fungus Infections* A *blastomycosis* of 20 years duration, with

localized to hand or foot E *coccidioidomycosis* with multiple granulomatous lesions the prognosis is poor in this form (E and F courtesy of Dr J Lewis Pipkin San Antonio Texas )

*rations*, but on culture the organism grows as a typical colony on ordinary dextrose agar, without any difficulty

**Etiology.** *Sporotrichum schenckii*, the causative fungus, has been *isolated from* barberry, carnations and other plants Cats dogs, and other animals may acquire the disease

**Treatment.** 1 In most instances the disease responds promptly to *the institution of therapy with* ***potassium iodide*** by mouth It is permissible to start with five drops of the saturated solution three times daily after meals The dose should be progressively increased until comparatively *large amounts of the drug are being ingested* (see Table 7, Chapter 25) The earlier the diagnosis and institution of treatment, the less drug necessary Conversely, in patients who have been neglected or misdiagnosed *with the development of many lesions, larger doses* (up to 100 or more grains a day) may be required In patients intolerant of potassium iodide other forms of the drug may be tried

2 *Antibiotic therapy has not proved very satisfactory*

3 Surgical interference may do more harm than good

4 Wet saline-boric acid packs may be applied at frequent intervals *(for 1 hour, four times daily) to ensure drainage and relieve edema*

## Blastomycosis

*It is now recognized that the skin manifestations of this mycosis* are almost always secondary to involvement of the lungs (Plate 55, A)

**Symptoms** The initial skin lesion is a pustule This ruptures, crusts over, and enlarges peripherally *The spread is comparatively slow*, and this may be misleading Eventually an elevated, crusted plaque has formed The ***edge*** of the patch, on careful examination, is found to be smooth and *slopes down abruptly to normal skin*, on the surface are minute abscesses which may require the hand lens for identification If treatment is not begun promptly, additional lesions soon form ***Systemic dissemination of the organism*** has already occurred and almost any other organ of the body may be affected Lesions in the lungs may be active or inactive

**Differential Diagnosis** The disease is frequently confused with ***tuberculosis*** of the skin The key to the diagnosis is the presence of minute pustules along the advancing smooth border ***Halogen dermatitis*** may be considered in cases in which the skin becomes hypertrophic, however, this disorder is usually observed on the legs below the knees, and there is a history of ingestion of the drug

**Etiology** The responsible fungus is ***Blastomyces dermatitidis***, a true yeast The infection is limited to North America, chiefly in the midwest

**Treatment.** 1 It is desirable to make an early diagnosis Following this, the small area may be eradicated either by surgical excision or, better still, by electrodesiccation

2 Medicinal treatment is still far from optimal Stilbamidine *or one* of the derivatives should be administered Toxic reactions must be watched for Paralysis of the fifth nerve has been reported

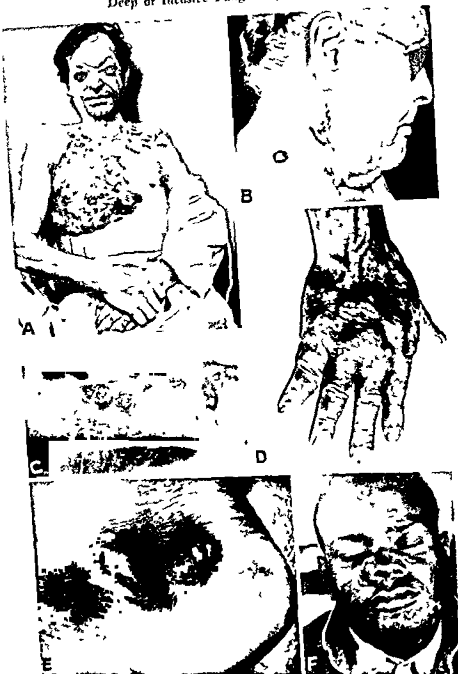



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## Coccidioidomycosis

In coccidioidomycosis there are two distinct syndromes the acute infection and the chronic form

Symptoms The initial invasion is usually in the lungs The syndrome thus produced is known in California as "*valley fever*" In most cases this runs a febrile course and ends in complete spontaneous cure The clinical picture is that of an acute upper respiratory infection, sometimes with pneumonia Many patients develop *erythema nodosum* In a small proportion of patients particularly in those with poor nutrition and low resistance the disease is not overcome and *secondary lesions* occur These may develop in the skin and are usually pustular and granulomatous deep abscesses are not uncommon Almost any tissue or organ in the body may then become involved The outlook in the secondary form is extremely serious

Etiology The majority of the reported patients come from California but it is known that the organism has a rather wide geographic range having been isolated from the soil not only from California but from other areas including Texas Arizona and New Mexico Sporadic cases are seen in many parts of the country The causative organism is *Coccidioides immitis* The disease is thought to be *acquired chiefly through inhalation of spores present in dust* It *is still unknown whether the organism develops* in the soil or whether it primarily infects wild and domestic animals from the internal organs of which it has been isolated No instance has been recorded of transmission of the disease from one human being to another Laboratory infections have occurred The period of incubation is approximately one week

Diagnosis In this era of rapid transportation the patient may acquire the disease in California and be at some distant point when the initial respiratory lesions develop It is therefore advisable to inquire into the previous whereabouts of the patient in all instances of unexplained upper respiratory infection The diagnosis of the acute form with upper respiratory tract symptoms will be favored by a history of residence in California Most patients also develop *erythema nodosum* The fungus may be recovered from sputum In patients revealing the granulomato [illegible] of skin [illegible] ndemic [illegible] lesion [illegible] the organism demonstrated microscopically and culturally

Treatment In the acute pulmonary form symptomatic therapy is usually sufficient There is no satisfactory treatment for the chronic granulomatous disease In all instances the patient should receive care similar to that accorded patients with tuberculosis Vaccine therapy is reported to be effective by some authors Corticosteroid drugs should be avoided

## Cryptococcosis (Torulosis)

The chief lesions in torulosis, a fatal mycotic disorder, are to be found *in the central nervous system*

**Symptoms.** The onset is usually insidious A subacute upper respiratory tract infection or a nondescript, pustular, crusted, and occasionally granulomatous lesion of the skin may be the first evidence of invasion The marked ***predilection of the organism for the cerebrospinal axis*** is soon evident Severe and persistent headaches, stiffness of the neck, and vomiting are characteristic Visual changes may occur Paralysis and convulsions are not uncommon There *is usually low-grade fever*

**Differential Diagnosis.** The skin lesions may resemble *pyoderma* or a *halogen dermatitis.* Tumors of the brain, tuberculous meningitis, syphilis, and other disorders may have to be ruled out because of the symptoms and signs referable to the central nervous system Demonstration of the organisms in the spinal fluid, by culture or by the India ink method, will provide a positive diagnosis

**Etiology.** The causative agent, ***Cryptococcus neoformans*** has been isolated from soil

**Treatment.** Therapy *is at present ineffectual,* which *is readily* explained by the large capsule protecting the organism The patient should be given the benefit of multiple therapy, including the sulfonamides, penicillin, and newer drugs like stilbamidine

## Histoplasmosis

In histoplasmosis the causative organism selects for propagation the reticuloendothelial cells in the body

**Symptoms** The classic symptoms in a well developed case are ***enlargement of the spleen and liver, fever, anemia, leukopenia,*** and ***progressive loss of weight.*** The lymph nodes may become enlarged Gastrointestinal *symptoms are common,* particularly in children The lungs may be either primarily or secondarily affected and occasionally are the only sites of the disease Various types *of lesions may develop in the skin* The commonest are ulcers and these may also affect the mouth There may also be purpuric areas, papules, plaques, abscesses, and patches of dermatitis There is good evidence that in most instances of primary infection of the lung spontaneous cure results The resultant scars resemble radiologically the picture of previous tuberculosis but in the majority of such cases the tuberculin reaction is negative

**Etiology.** The causative microorganism is ***Histoplasma capsulatum,*** which probably exists saprophytically in nature Cases have been *reported from* widely separated geographic sites No age is exempt, and infants and children seem particularly susceptible

**Treatment.** *No definitive* treatment has yet been developed The antibiotic drugs (sulfonamides) and ethyl vanillate have been advocated as helpful

# Secondary Cutaneous Tuberculosis

Secondary cutaneous tuberculosis occurs in previously infected patients and is due to external inoculation or to spread from an internal focus through the lymphatics or blood stream The wide variation in clinical expressions noted in the skin results from a combination of clinical factors such as the age of the individual the state of health the general body resistance the virulence of the infecting organism and the allergic status of the skin in regard to the infecting microorganism

## Verruca Necrogenica

Verruca necrogenica or anatomical tubercle usually occurs on the

an abrasion

ed and thick

ened and may persist as a horny warty lesion for several months or years

## Tuberculosis Verrucosa Cutis

Tuberculosis verrucosa cutis is similar to anatomical tubercle The majority of lesions are found on the hand

Symptoms The clinical features are those of a warty infiltrated sharply demarcated plaquey eruption The condition usually remains localized *to one* area but in some instances there is a tendency to spread Ulceration rarely occurs For the most part the lesions remain dry although at times the surface may become moist

Etiology The disease usually occurs *in* persons who are caring for tuberculous patients in sanitoriums and other institutions It is thus often an occupational disease

## Scrofuloderma

(L *scrofa* an old sow)

*This* type of tuberculosis is secondary to tuberculosis of the lymph nodes bones or joints (Plate 56 B)

*Symptoms It is* common for tuberculosis of the lymph nodes or bones *to* exist for many months or even years before the skin becomes involved There is a tendency *for the lymph* nodes to become *matted to*gether In time the skin becomes *adherent and* the patient usually complains of pain As the skin becomes *affected* the area assumes a deep red color followed by central *softening* apparent fluctuation and then ulceration In other instances *openings or sinuses develop* with the discharge of small amounts of serous or semipurulent material The tendency is for healing to take place with *extensive scarring* The rate of healing depends a great deal on the resistance of the individual Small foci may flare up from time to time

*Chapter 11*

# Tuberculosis and Allied Disorders

INFECTION with the tubercle bacillus (L *tuber*, lump) may be revealed in a number of different cutaneous expressions Skin tuberculosis is much less frequent in this country than in Europe, although all the different forms are occasionally seen Tuberculosis of the skin may be divided into the following subdivisions

1 Primary tuberculous complex
2 Secondary cutaneous tuberculosis
3 *Tuberculids*
4 Diseases of disputed tuberculous etiology

Sarcoid is considered by many to be a manifestation of tuberculosis while others are certain that it is a disease sui generis It is therefore placed with the diseases of disputed tuberculous etiology

## Primary Tuberculous Complex

The term, primary tuberculous complex, refers to an initial cutaneous infection in an individual previously free of the disease (Plate 56, A)

**Symptoms.** The lesion at first is a papule, slowly growing to become a plaque, which often ulcerates Regional lymphadenopathy is prominent Most of the patients are children, and the face is usually the site of involvement However, lesions may appear on the extremities or genitals

***Differential Diagnosis*** *Syphilis* and *sporotrichosis* are the chief diseases to be differentiated Syphilitic chancre is less likely in children Spirochetes will be found on a dark-field examination, and there may be evidence of a roseola In sporotrichosis there is no lymph node enlargement *Sporotrichum schenckii* is readily demonstrated in culture In most instances the tuberculous infection heals much slower than the other two The tuberculin reaction becomes positive after several weeks The diagnosis may usually be proved by guinea-pig inoculation of biopsy material from the lesion

## Lupus Vulgaris

(L. *lupus* wolf)

Lupus vulgaris is usually considered the prototype of tuberculosis of the skin (Plate 56 C)

Symptoms Any part of the body surface may be involved but according to Sequeira Ingram and Brain the face was affected first in 78 per cent of the cases seen at the London Hospital The mucous membranes are not resistant and are often the site of the disease The first evidence of the condition is a small macule or papule which is yellow red or brown This lesion spreads by peripheral growth and if others develop nearby they may coalesce As the disease extends and becomes more deeply situated in the skin there is a tendency to spontaneous healing in the center with formation of scars At times ulcerations occur although this is rare A variable amount of scaling is present If a lesion is examined under pressure with a glass microscopic slide or a diascope the erythema is obliterated and the so-called *apple jelly nodule* (light brownish red) becomes apparent (Plate 56 D) The spread of the disease is always slow but in time rather large areas may be involved There is always scar formation often with contractures and in severe cases tremendous mutilation may result (Plate 56 E) Epithelioma is an occasional complication particularly in areas of long standing involvement Another method of demonstrating a lupus nodule is *the probe test,* in which a toothpick is gently pressed into a nodule It pierces the nodule quite readily and will often stay in the lesion when it is released sticking out from the skin at right angles showing that the tuberculous infiltrate is deep in the corium

Differential Diagnosis The disease must be differentiated from *late syphilis* and *epithelioma* The clinical

a probable diagnosis but in every

biopsy In children the tuberculin

always positive in this disease Lupus nodules sometimes are seen in scar tissue whereas with syphilis the active disease is never observed in scar tissue Sometimes the serologic test for syphilis is important

Etiology Lupus vulgaris is seen chiefly in children and young adults and females are more vulnerable than males There is often a history of tuberculosis in the family and occasionally this may be demonstrated in the patient The disease is much more common among poor people particularly when living conditions are bad It is rare in the tropics

Pathology In the upper dermis there are epithelioid cells giant cells of the Langhans variety and plasma cells and lymphocytes at the periphery of the tubercle Ulceration pseudoepitheliomatous hyperplasia and fibrosis are secondary changes and may not be present The tubercle bacillus is usually impossible to demonstrate

## Lupus Miliaris Disseminatus Faciei

Lupus miliaris disseminatus faciei (Plate 56 F) may be considered a variant of lupus vulgaris although some class it as a tuberculid



Plate 56

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could be demonstrated k
serious deform ty *Lupus m l arıs dısseminatı s facıeı* F a m cropapular type oı t o ıcu
losıs

tubercl bacillus is rarely or never found in such eruptions The histologic structure however is tuberculous

## Lichen Scrofulosorum

Lichen scrofulosorum is seen in tuberculous patients

Symptoms The lesions appear in showers are skin colored or reddened small papules often flat topped and sometimes scaly There is a tendency to grouping in patches (Plate 57 B)

Etiology There is usually an obvious focus of tuberculosis The patients are almost all children

## Rosacea like Tuberculid

In rosacea like tuberculid of Lewandowsky (Plate 57 A) there is a strong resemblance to rosacea although the tendency is for lesions to appear on the periphery of the face instead of the middle third The lesions are of various types including brownish papules and pustules Diascopic pressure reveals a residual yellowish brown color

## Papulonecrotic Tuberculid

In papulonecrotic tuberculid showers of lesions appear remain for several weeks and then spontaneously disappear leaving scars The initial lesions are papules which become necrotic and eventually break down (*Plate 57 C*) become crusted and disappear The lesions have a tendency to develop on the face particularly on the cheeks nose and ears The extremities may also be involved the trunk is affected much less frequently The tendency is for recurrences over many months or years

## Erythema Induratum

In erythema induratum (*Plate 57 D F*) the tendency is for localization to a limited area and for the lesion or lesions to be deep-seated

*Symptoms* The lesions are usually on the lower third of the leg favoring the posterior aspect (*lower calf*) At first there is a red indurated relatively painless area and on palpation the lesion is noted to be a deep process Ulceration occurs usually very promptly giving a characteristic punched out appearance The course is protracted with tendency to spontaneous healing and scar formation to be followed later on by a relapse

Differential Diagnosis The disease must be differentiated from erythema nodosum and from nodular vasculitis In the former disorder the lesions are usually on the anterior aspect of the legs are painful to touch and never ulcerate The latter disease may present similar clinical features but the patients are mostly middle aged

Etiology There is often a history of tuberculosis in the family or in the individual The patients are almost always young girls and persons who stand a good deal or are frequently exposed to the cold are particularly affected The condition tends to exacerbate during the winter months

Pathology There is obliterative vasculitis thrombosis and eventually obliteration of the large blood vessels of the fat Perivascular tubercle for

**Symptoms.** The eruption, developing on the face, consists of discrete, light red to brownish red papules which remain small and do not coalesce Testing with a diascope and with toothpick are both positive

## Tuberculous Ulcer

Tuberculous ulcers are for the most part observed around the mouth in the mouth, and around the anal orifice They are usually secondary to visceral tuberculosis, and in the pre isoniazid era their appearance was a bad prognostic sign Tuberculous ulcers are indolent, shallow, granulating at the base and often covered with a purulent crusted material

## *Disseminated Tuberculosis*

The skin may share the infection with other organs in the body in fulminating widely disseminated tuberculosis This type may occasionally follow measles or scarlet fever or some other debilitating disease in an infant or child who is already poorly nourished and probably infected The eruption is multiform, being papulovesicular, pustular and crusted

## Treatment of Tuberculosis of the Skin

Cutaneous manifestations of tuberculosis should always arouse the curiosity of the physician as to other foci, particularly in the lungs Appro priate physical examination, roentgenologic studies and tuberculin testing are indicated The immediate family and friends should also come under surveillance

In the treatment of all phases of tuberculosis, current practice is to depend considerably on chemotherapy It is well to remember that ade quate rest, nutritious diet, and instruction in good hygiene are still im portant in order to achieve the best results

**Systemic Therapy.** *Isoniazid, dihydrostreptomycin,* and *para-amino salicylic acid* are the most effective agents The usual effective dose of isoniazid is 50 mg three or four times daily, this may be increased or a combination of drugs may be utilized when response is slow or the involve ment is extensive There are few instances of reaction to isoniazid and these are mild so the drug may be safely continued for long periods It is customary for the patient to continue isoniazid for at least one year even when the disease clears in a few months

Vitamin $D_2$ (Calciferol) is still being used in some centers This is a potentially toxic drug tends to increase serum calcium and the results are never completely satisfactory We have discontinued its use

**Local Therapy.** Local destruction by solid carbon dioxide or electro desiccation or excision surgically of a small lesion is sometimes feasible A solution of streptomycin has been injected locally with some help

# Tuberculids

Several types of eruption due to *Mycobacterium tuberculosis* or its products are observed in individuals with considerable skin immunity The

tubercle bacillus is rarely or never found in such eruptions The histologic structure however is tuberculous

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Etiology There is usually an obvious focus of tuberculosis The patients are almost all children

## Rosacea like Tuberculid

In rosacea like tuberculid of Lewandowsky (Plate 57 A) there is a strong resemblance to rosacea although the tendency is for lesions to appear on the periphery of the face instead of the middle third The lesions are of various types including brownish papules and pustules Diascopic pressure reveals a residual yellowish brown color

## Papulonecrotic Tuberculid

In papulonecrotic tuberculid showers of lesions *appear remain for several weeks* and then spontaneously disappear leaving scars The initial lesions are papules which become necrotic and eventually break down (Plate 57 C) become crusted and disappear The lesions have a tendency to develop on the face particularly on the cheeks nose and ears The extremities may also be involved the trunk is affected much less *frequently* The tendency is for recurrences over many *months or years*

## Erythema Induratum

In erythema induratum (Plate 57 D E) the tendency *is for localization* to a limited area and for the lesion or lesions to be deep seated

*Symptoms* The lesions are usually on the lower third of the leg favoring the posterior aspect (*lower calf*) At first there is a red indurated relatively painless area and on palpation the *lesion is* noted to be a deep process Ulceration occurs usually very *promptly* giving a characteristic punched-out appearance The course is protracted with tendency to spontaneous healing and scar *formation* to be followed later on by a relapse

Differential Diagnosis The disease must be differentiated from erythema nodosum and *from nodular vasculitis In the former* ...
lesions a
and nev
but the

Etiology There is often a history of tuberculosis in the family or in the individual The patients are almost always young girls and persons who stand a good deal or are frequently exposed to the cold are particularly affected The condition tends to exacerbate during the winter months

Pathology There is obliterative vasculitis thrombosis and eventually obliteration of the large blood vessels of *the fat* Perivascular tubercle for




**Plate 57**

*Tuberculids Rosacea like tuberculid of Lewandowsky* A often confused with rosacea *Lichen scrofulosorum* B the lesions are minute and grouped *Papulo necrotic tuberculid* C, the deep seated lesions become ulcerative *Erythema induratum* D, with new deep seated lesions above and a healed ulceration on the left leg just above the ankle E, sluggish ulcer deeply situated over calf

mation and, frequently, necrosis and ulceration are noted. The fat cells are gradually replaced by the infiltrate. Foam cells are present as in other inflammatory diseases of the fat.

## Treatment of Tuberculids

Careful search should be made for foci of tuberculous infection in the patient and in the family. There should be careful attention to good hygiene and a high calorie, high vitamin diet (particularly for vitamins A and D). It is important to avoid exposure to cold. When the lower extremities are involved, it is often advisable to support the circulation by elastic bandages applied in the morning and not removed before night. Local measures of variable value include the use of cod liver oil ointment, the application of white lotion (in rosacea like tuberculid), painting with 1 per cent aqueous gentian violet, or, if ulcers have developed, application of wet saline-boric acid compresses for 30 minutes once or twice daily. Irradiation with ultraviolet rays is considered useful. Isoniazid should also be prescribed. The results are not dramatic but the drug assists in the final good result. *Dihydrostreptomycin* and para aminosalicylic acid are seldom employed. Occasionally, intravenous injection of gold sodium thiosulfate has been effective.

## Diseases of Disputed Tuberculous Etiology

The list of diseases to be included in this category is smaller now than formerly. There may be an occasional case of *erythema nodosum* caused by the tubercle bacillus, although this seems uncommon in the United States. There are also few observers on this side of the Atlantic who seriously believe that *discoid lupus erythematosus* has any relation to tuberculosis, although this idea is still entertained by many European dermatologists. Another skin disorder which is as yet of uncertain nosology and which reveals a pathologic architecture suggestive of tuberculosis is *lichen nitidus* (Chapter 8). The outstanding example, however, of outright confusion is *sarcoidosis*. Many astute observers are unwilling to admit a tuberculous etiology and believe the evidence favoring that view is entirely circumstantial or fortuitous.

### Sarcoidosis

Sarcoidosis is a systemic disorder in which the skin, the bones, and the lungs, as well as other tissues, may be involved (Plate 58, A, B, C).

Symptoms. Cutaneous involvement is evidenced by the appearance of papules, nodules, or infiltrated plaques. Most lesions are found on the face, but they occasionally develop on the upper trunk or extremities. The color varies from a reddish blue to brownish. Ulceration is almost unknown. Seldom can one make an unequivocal diagnosis on the clinical appearance alone. Numerous widely dispersed . . .




**Plate 58**

*Sarcoidosis (Boeck's sarcoid). The lungs, bones, uveal tract and other structures may share this disease.* A, solitary elevated erythematous plaque. B, multiple lesions over face; roentgenogram of chest showed typical picture. C, generalized lichenoid eruption with symmetrical distribution observed mainly in the Negro. *Granuloma annulare*: D, solitary lesion on back of hand. E, discrete firm ringed plaques widely disseminated.

any lesions in the skin other tissues and organs may be affected (1) *lymph nodes*—this is common and may be generalized (2) *lungs*—although this usually produces no symptoms a characteristic mottling is often observed on x ray examination (3) *bones*—a peculiar rarefaction may often be noted on roentgen examination of the bones of the hands or pelvis or elsewhere (4) *liver and spleen*—involvement of these organs is occasionally found (5) *uveal parotitis*—the syndrome involving enlargement of the parotid gland and inflammation of the uveal tract is now considered an integral part of the sarcoid picture

**Etiology** Many investigators believe that sarcoidosis is a result of tuberculosis being a manifestation of a high degree of immunity Others including Michelson are not convinced It is of interest that the reaction to injections of tuberculin often reveals a state of positive anergy which means that the individual with sarcoidosis fails to react to concentrated tuberculin when the normal individual would

**Pathology** In the upper cutis are pure collections of epithelioid cells which are sharply demarcated A few giant cells may be seen Ulceration is a rarity Inflammatory reaction is trivial or absent The giant cells may be of two types (1) the Schaumann body which contains basophilic masses and (2) the asteroid body which is a stellate formation of cytoplasm Histological sections of the positive Kveim test are identical with the usual findings in sarcoidosis

**Prognosis** The prognosis is fairly good although it is not uncommon in the disseminated form for the patient to develop active tuberculosis These might be considered cases of acquired infection in a vulnerable patient but the inference was made that the immune status of the patient changed for the worse

**Treatment** Preliminary investigations should include a biopsy graded tuberculin and Kveim skin tests and roentgenograms of the chest and bony structures The administration of gold and arsenic are not often resorted to at this time In many instances the lesions disappear spontaneously without treatment Corticotropin and corticosteroids are often temporarily helpful, but [illegible] stopped Care must be ex[illegible] have active tuberculosis [illegible] [illegible] may be tried

## Granuloma Annulare

Granuloma annulare is a ringed eruption usually present on the hands (Plate 58 D E)

**Symptoms** The lesions are papules or nodules that extend peripherally leaving a normal or atrophic skin in the central portion The elevated border is frequently broken up into segments The lesion is usually skin colored sometimes with a bluish red halo On palpation the lesions are firm and give the impression of a deep infiltrative process In the dissemi

nated form, the lesions are small skin colored papules, widespread in distribution, particularly involving the extensor surfaces of the extremities

**Etiology** Most patients are children

**Pathology** In the upper cutis, there is granular degeneration surrounded by a radial arrangement of fibroblasts, lymphocytes and histiocytes In the surrounding area there is endothelial proliferation of the blood vessels and lymphocytic infiltration in the perivascular area Foreign body giant cells are sometimes present

**Treatment.** After removal of a biopsy specimen the remainder of the lesions may spontaneously resolve X-ray therapy or treatment with solid carbon dioxide is the usual procedure, and results are almost always good In cases of widespread distribution, heavy metal therapy (bismuth) may be given a trial

Chapter 12

# Syphilis

WITH MAHONEY'S discovery in 1943 that syphilis was amenable to treatment with penicillin the management of this age old disease entered a new era Whereas the treatment of syphilis was formerly uncertain and hazardous because of the variabilities in response of the patients and the toxicity of the drugs used the present-day treatment of syphilis is not difficult or ineffectual and certainly it is without danger in almost every instance It should be remembered that ***syphilis is a serious disease*** from many standpoints From a purely medical consideration its insidious development in important organs may cause serious impairment in their function before the nature of the disorder is recognized From all indications and from the consideration of the data available the ***incidence of syphilis has remained low for the past few years*** The number of patients with syphilis now seen in private and dispensary practice are so few that physicians are missing the stimulus engendered by frequent contact with such patients and may therefore lose interest in a very important disease There is also the danger that physicians in general will become less aware of the clinical features of syphilis Practitioners are not apt to overlook the obvious clinical evidence of the disease such as genital lesions However the manifestations of the disorder on other areas of skin and in various other organs of the body may not be recognized as syphilitic because of their rarity in the present day practice of medicine There is another pitfall as well The fact that penicillin has brought syphilis into the category of an office treated disease with a comparatively short treatment schedule has led many doctors and patients to assume that follow up observation is not essential even when treatment has been minimal Therefore a fairly large number of patients are lost from observation in whom there exists the possibility of either clinical or serologic relapse or both Physicians should be on the look-out for inadequately treated latent syphilis and for late manifestations of the disorder in patients who have had minimal therapy without prolonged post treatment observation

# Symptoms

## Early Syphilis

After an incubation period of approximately 18 to 21 days, the first clinical evidence of the disease is manifested in the development of *the chancre* (Plate 59, A, B), which is classically a button-like, firm infiltrated lesion developing at the site of infection This initial manifestation may be less typical, with an open ulcer sometimes of insignificant appearance but ***always painless*** There is always an enlarged regional (satellite) lymph node ***In males,*** the penis is the site of predilection, with lesions on the glans, corona, or prepuce Instances have been reported of meatal chancre It is also worth recording that chancre occurs more frequently in non circumcised individuals ***In females*** a chancre may be present on the external genitalia or the lesion may be found on the cervix on examination with a speculum The vagina is rarely infected ***Extragenital lesions*** may occur on any part of the body The lips are a likely location, and in physicians and nurses the fingers are vulnerable In homosexuals the perianal region may be involved *Primary syphilis is often overlooked when lesions are atypical in location or appearance A blood serologic test may or may* not be positive, positive reactions usually develop about the thirty-fifth day after infection

If untreated the chancre disappears spontaneously in seven to ten weeks after infection A macular eruption then appears almost always located on the trunk Sometimes the rash is so indistinct that it escapes detection It is noteworthy that this as well as the other ***cutaneous syphilids are non pruritic.*** At this time, or within a few weeks, there may be a generalized glandular enlargement The throat is often injected the patient complains of headache, and when examined, the serologic test for syphilis is always strongly positive *Patchy (moth eaten) alopecia* of the scalp may be observed During succeeding weeks these symptoms disappear spontaneously, to be followed later in many instances by other eruptions The *lesions are now coppery or ham colored (light reddish brown), and macu*lopapular, have a tendency to generalization, and are often found on the palms and soles (Plate 59, E, F), if the anal region, interdigital areas of the feet, and sides of the mouth are examined, moist papules (often split) or condylomas *will probably be found In colored patients,* particularly, annular and ringed configurations may be noted on the skin A serologic test will still be strongly positive Mucous patches may be present on the oral mucosa In women a peculiar mottled hypopigmentation of the upper trunk or neck is sometimes seen ***The causative organism, Treponema pallidum, is present in large numbers in the cutaneous or mucous membrane lesions*** of all of the above-mentioned manifestations of early syphilis It is therefore very important *to make a diagnosis as quickly as possible* in order to institute treatment and thus prevent infection of contacts This is accomplished by suspecting the disease obtaining a suggestive history of exposure, finding the causative organism by means of dark field examination, and lastly, by removing blood for a serologic test Treatment should




Plate 59

when there is difficulty over differential diagnosis

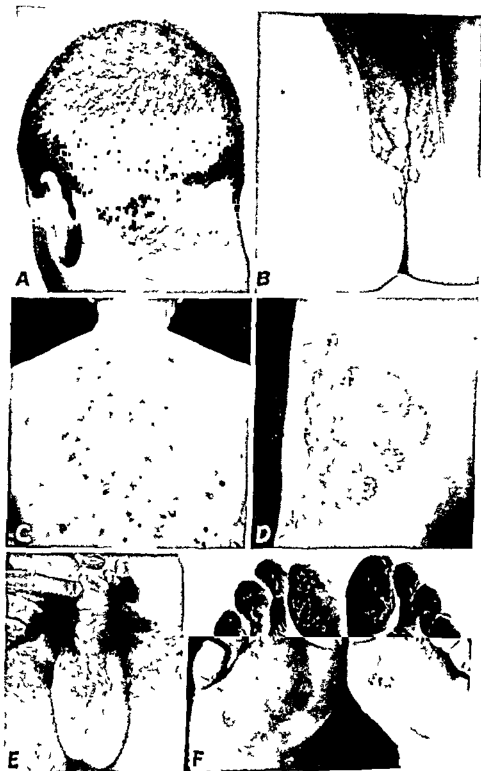



Plate 60

moth eaten appear
*dylomata lata* highly
syphilid the lesions
may closely resemble
ules and plaques on

never be started until a positive laboratory diagnosis has been obtained and confirmed

## Latent Syphilis

The visible manifestations of early syphilis disappear with or without treatment If the blood serologic test remains positive the disease enters a latent period in which there is no detectable clinical evidence of the disease This may last for months or even years If not treated 25 per cent of the patients develop late manifestations It is important to remember that ***in 60 per cent of the patients the blood serologic reaction is irreversible,*** despite treatment Latent syphilis is usually divided into early and late types ***Early latent*** is that type in which the patient has had the disease less than four years or is under twenty five years of age In ***late latent*** syphilis the disease is known to be of over four years duration or the patient is twenty five years of age or older During this latent period there are neither symptoms nor signs of the disorder the patient will not infect contacts but the blood serologic test is positive One must be careful to eliminate the possibility of a false positive reaction in all patients in whom the diagnosis of latent syphilis is considered A ***biologic false positive re action*** may occur in such diseases as leprosy malaria lupus erythematosus Weils disease infectious mononucleosis brucellosis Bantis disease leu kemia sarcoidosis and certain upper respiratory diseases as well as after smallpox vaccination In such instances the positive reactions last for only a limited time or [illegible]

## Late Syphilis

After a latent asymptomatic period of variable time the organisms finally become activated in some organ in the body Late syphilis may occur in patients who have had no therapy or in whom the treatment was insufficient Failure to detect the syphilitic process before the late features develop may be the responsibility of the patient if he ignored reporting a chancre or a florid eruption or if he lapsed from observation after due warning In many cases however the physician must accept responsibility either for letting the patient stop treatment or for not following his progress by appropriate clinical and serologic observations Physicians have become less vigilant in performing routine blood tests since the percentage of positive results is so small Actually late syphilis is now uncommon

After the incubation period of early syphilis the serologic blood re action is always positive In late syphilis the blood reaction is also usually positive but is not invariably so The clinician must therefore be alert to the possibility that at times he must rely on his own interpretation of the available signs Sometimes a therapeutic test is advisable At times more than one organ is involved and the patient should be carefully examined physically by use of roentgen rays and by spinal puncture









Plate 61

*Late Syphilis* *Syphilitic glossitis* A differentiation from carcinoma is important—doubt *Late cutaneous syphilid* B unilateral alized nodular destructive lesions D nodular ncontractile central scarring




Plate 62

*Late Syphilis* A perforating ulcer in a patient with neurosyphilis B gumma of skin and subcutaneous tissue with ulceration note unilateral involvement and sharply marginated ulcers C *noma* a fortunately rare highly destructive manifestation other microorganisms may be partially or wholly responsible *Congenital Syphilis* D the presence of notched permanent incisors is one of Hutchinson's triad of stigmas

Skin *Nodular lesions* usually develop as deep seated tumefactions of dusky red color They tend to be grouped and by coalescence to form rings or arcs Growth is usually by peripheral extension with healing in the center of the area In another variety of late syphilis, ulceration occurs—the so called *nodular ulcerative type* (Plate 61) Resolution is always accompanied by scar formation The scar is usually thin and non contractile, retaining the arciform configuration of the original lesion These manifesta

tions are localized to a limited area of skin and usually are asymmetric The nodular syphilid may occur on any part of the body but is frequently seen on the face, the ulcerative form is not uncommonly noted on the thighs *Gummas* may also involve the skin, but such involvement is usually secondary to the primary occurrence in the sub cutis or in the periosteum They tend to become necrotic and are nearly always painless With loss of tissue a characteristic *punched out ulcer* develops (Plate 62, B) The most common location in the skin is over the thick part of the calf All late cutaneous manifestations are characterized by their indolence

**Cardiovascular System.** Involvement of the heart or great vessels is a *serious complication of syphilis which occurs in about 10* per cent *of all* untreated syphilitics or in patients who have been inadequately treated *Uncomplicated* aortitis is not common, and in itself is relatively harmless The chief threat to life is in the development of *aneurysm of the aortic arch* With involvement of the aortic valves, aortic insufficiency appears In time symptoms of heart failure develop These symptoms and clinical signs are variable, and accurate diagnosis of the cardiovascular involvement is not always possible Angiocardiography may contribute to an accurate under standing of the site and extent of the process

**Nervous System** The patient may have *asymptomatic neurosyphilis,* the diagnosis resting on negative physical findings and positive findings in serologic and other tests of the spinal fluid Syphilis of the nervous system is further classified as *meningovascular* or *parenchymatous* The symp *toms of meningovascular neurosyphilis vary considerably, according* to the site of involvement Headache is frequent Parenchymatous neurosyphilis *includes general paresis, in which there is diffuse syphilitic involvement* of the cerebral hemispheres, and *tabes dorsalis,* in which the degenerative changes occur in the posterior columns of the spinal cord *Taboparesis* refers to a condition in which the symptoms and signs indicate diffuse in vasion of parenchymatous tissue in the brain and spinal cord

To support a diagnosis of neurosyphilis, the spinal fluid examination should include a careful cell count (performed as soon as possible after withdrawal of the fluid), tests for protein (qualitative and quantitative), and the complement fixation and colloidal gold tests

**Other Organs** Any organ of the body may be involved In late syphilis, gumma of the liver (*hepar lobatum*) is not uncommon There are many examples of syphilis of the stomach The bones and joints are estimated to be involved in 5 per cent or less of untreated patients

## Congenital Syphilis

During the first weeks of life the diagnosis of congenital syphilis may be made only by repeated serologic tests Sometimes three months is re quired before a positive opinion can be rendered *Interstitial keratitis is the most important single lesion* of congenital syphilis Radiating scars around the mouth are frequently seen Condylomas may appear, and the deciduous teeth frequently show considerable decay Later, Hutchinson's teeth (*notched permanent incisors*) may be noted Hutchinson's teeth

bilateral deafness and interstitial keratitis comprise the so-called triad of stigmas of congenital syphilis Bone lesions are frequent resulting in such well known deformities as "saddle nose" and "saber shin"

## Syphilis in Pregnancy

It is well known that *syphilis in pregnant women often takes a benign course* Manifestations may be minimal or absent For this reason a diagnosis may be arrived at only by a serologic test Confirmation of the test particularly with a rising titer is desirable before treatment is begun

Pathology In all of the early forms of the disease the histologic picture is similar showing endothelial proliferation and a perivascular infiltrate of lymphocytes and plasma cells Without plasma cells the diagnosis cannot be made

In the nodular type of tertiary syphilis epithelioid and foreign body giant cells are also present In gumma necrosis and ulceration are also to be seen

# Treatment

Sufficient time has elapsed to permit the statement that *penicillin is the drug of choice in the treatment of all types of syphilis* However so many schemes have been promoted and advised by workers in the field that further changes may be expected before agreement is reached on a schedule or a method of attack While this may seem confusing the main point to keep in mind is that means are now available for combating one of mankind s greatest scourges It is now almost unanimously agreed that penicillin alone is adequate for the treatment of uncomplicated early syphilis Bismuth and arsenic are such toxic drugs with such potentialities for harm to the individual that sole reliance save in exceptional instances should be placed on penicillin Among early advocates for penicillin alone Thomas reported 96 per cent of cures with intramuscular injection of 600 000 units of a repository type penicillin daily for fifteen consecutive days This is a total dose of 9 000 000 units Experience has shown that a fairly high percentage of cures may be obtained in early syphilis from administration of 2 400 000 units or even 1,200 000 units Because most patients with syphilis are in a group which may be labeled "unreliable" it might be advisable to begin therapy (after adequate laboratory confirmation) by administering the first day a total of 1,200 000 units of a repository type penicillin in four injections [illegible]
to return there is st [illegible]
does return he sho [illegible]
pository type penic [illegible] to ten consecutive days Sunday may be omitted from the schedule

*A positive serologic or dark field diagnosis should be obtained in all patients before treatment is started* After treatment titered blood examinations should be performed monthly In the usual sequence of events in early syphilis the blood titer will drop slowly to a negative reaction In

patients in whom the blood titer stays at the same level or increases, treatment must be considered a failure In congenital, late latent, or late syphilis a serologic or cutaneous relapse should always be suspected and watched for, even when the initial response is apparently good It would then be advisable to consult with a dermatologist The usual procedure in such cases is to reinstitute therapy as outlined above, increasing penicillin to a *total dose of 12,000,000 units* In this event also some workers in the field believe that arsenic and bismuth should be administered in courses Mapharsen may be given concurrently with the penicillin in a dose of 0 3 gm intravenously once weekly for ten weeks, followed by ten injections of bismuth, the drug of choice being bismuth subsalicylate, 0 2 gm intramuscularly once a week ***The patient should not be discharged from observation for at least one year after the first negative test.*** Other obligatory examinations, in addition to periodic blood tests, are (1) a *general physical examination* for evidence of the disease in some other part of the body, (2) a *roentgenogram of the chest* for evidence of damage to the heart and great vessels, and (3) *spinal fluid examination, which should be negative* in all phases

**Intolerance to Penicillin.** When there is intolerance to penicillin as evidenced by appearance of an urticarial eruption the administration of one or more of the antihistamines may counteract or ameliorate the unwanted effect If possible, penicillin should be continued It is usually necessary to prescribe one or more of the antihistamine agents, and the dosage should be 25 mg or more three times daily, gradually increasing the dose if side-effects do not develop Corticotropin or a corticosteroid are even more effective to alleviate serum sickness-like reactions When an *exfoliative dermatitis* occurs it is probably best to discontinue penicillin, although in one such instance the drug was not withdrawn and the skin disease eventually disappeared In all such cases however, a consultation is strongly advised

If penicillin is discontinued prior to administration of an adequate amount therapy with a tetracycline drug should be considered The tetracyclines are effective treponemicides If for some reason none of the antibiotic drugs can be utilized, institution of continuous treatment using the now outmoded scheme of 40 injections of mapharsen and 60 injections of bismuth subsalicylate must be instituted

## Neurosyphilis

Asymptomatic neurosyphilis (diagnosis being based on the finding of an abnormal spinal fluid but without any clinical sign or symptoms) may be treated by the daily injection of 600 000 units of a repository type penicillin to a total dosage of 9,000 000 to 12,000,000 units The spinal fluid should be examined monthly and in favorable cases improvement will be noted within three months If a favorable response is not obtained within that time, consultation with a dermatologist or neurologist is advisable The same schedule may be used in the *treatment of other types of neurosyphilis* but consultation prior to beginning treatment is strongly urged

## Cardiovascular Syphilis

Fear of a Herxheimer reaction in patients with cardiovascular syphilis has led to caution in considering penicillin treatment Treatment with a heavy metal for six to eight weeks before administering penicillin was formerly advised but is now seldom practiced A daily dose of 300 000 units of a repository type penicillin should be given for twenty days for a total dose of 6,000 000 units Digitalization is necessary if heart failure is present The mercurial diuretics are useful for treatment of edema

## Late Cutaneous and Osseous Syphilis

As in other forms of syphilis the chief reliance for cure in late cutaneous and osseous syphilis should be placed on penicillin the usual procedure being to administer 600 000 units of a repository type penicillin once daily for ten to twelve consecutive days omitting Sunday if desired While other drugs may be of historic interest only some dermatologists with long experience still prefer to give bismuth subsalicylate 2 cc once weekly for six to ten weeks prior to instituting penicillin therapy Potassium iodide is also well tolerated and often advisable for its nonspecific effect

## Congenital Syphilis

Ingraham has demonstrated that the best results in congenital syphilis are obtained when treatment is begun in the first three months In a newborn infant the repository form of penicillin may be administered in a dose of 150 000 units repeated every other day for six injections In patients over two the unit and total dose may be doubled Cortisone is useful in the treatment of interstitial keratitis

## Syphilis in Pregnancy

The patient should be treated as soon as the diagnosis is confirmed It is still considered advisable to treat any patient who has ever had syphilis during each pregnancy although Goodwin and Farber and others have shown that such repetition is not necessary if prior therapy has been adequate and there is no evidence of active infection If parturition is imminent 1 200 000 units or more of a repository type penicillin should be given immediately and 600 000 units daily for the next six to ten days At other stages of pregnancy the larger initial dose is unnecessary but 600 000 units should be given daily for six to ten days If daily injections are not considered feasible the total dose of 3 600 000 to 6 000 000 units may be given in injections of 600 000 units two or three times weekly

# Prophylaxis

A single injection of 1 200 000 units of a repository type penicillin will almost certainly abort the disease All sexual partners of a known case of infectious syphilis should be so treated All patients receiving therapy of this type should be observed periodically for at least six months

## Criteria of Cure

It is often difficult to estimate when a patient with syphilis is cured For all practical purposes a patient with early syphilis may be said to be cured when (1) *the blood serologic test for syphilis reverts to a completely negative reaction and remains negative for one year,* (2) *the spinal fluid is normal;* and (3) *there is no clinical symptom or sign of activity*

In late syphilis the disease may be said to be arrested when all clinical signs have disappeared or have become stationary and the findings in the blood or spinal fluid or both have reversed to normal or are inactive With a fixed reaction in the blood, an estimate of the status is made from the presence or disappearance of specific lesions and of any subjective symptoms and maintenance of a low serologic titer

## Summary

The medical practitioner should still be alert to the presence of syphilis in all its forms, particularly when the disease is in the infectious state Although any part of the body may be affected, in most instances an accurate diagnosis of skin lesions is the most revealing A blood serologic test is an important aid if the physician remembers to remove blood for this purpose Treatment should not be undertaken before a positive laboratory diagnosis has been made It should be stressed that the diagnosis of syphilis is sometimes difficult and that one should always seek laboratory confirmation In late, benign cutaneous or osseous syphilis in which the blood reaction is negative, it is sometimes necessary to institute treatment, but in such an instance the physician should ask for a consultation with a dermatologist The treatment of syphilis has become greatly simplified in recent months and years Repository type penicillin at this time is the drug of choice and may be the sole drug necessary for treatment of most types of syphilis The late effects of syphilis are so far reaching and important that the practitioner should never hesitate to call in a consultant if he is not entirely certain of the exact status of the patient All patients with syphilis should be followed carefully after treatment procedures have been undertaken, and no patient with syphilis should be discharged until the lapse of one year following a negative serologic test of his blood All patients with syphilis regardless of the stage or the organ involved, should have a roentgenogram of the chest and a spinal fluid examination Practitioners should also be alert to the possibility that *manifestations of syphilis may be suppressed by inadequate doses of penicillin given to the patient for some other purpose.* This may result in delayed manifestations sometimes observed on the skin or, of more consequence to the patient, involvement of the heart or central nervous system At this time little active early syphilis is being seen, but the medical profession should not allow this to delude them into a state of complacency The disease is still the great mimic and will undoubtedly be part of medical practice for many years to come

# Virus and Other Infections

THE DISORDERS to be discussed in this chapter are classified under the following headings

1 Herpetic infections
2 The acute exanthemas
3 Rare bacterial and protozoan diseases
4 Venereal diseases (other than syphilis)

During recent years considerable attention has been given to the diseases in which the causal organism is a filter passing agent Investigation has established a viral etiology for many of the so-called exanthematous diseases including varicella, variola, rubella and measles, and for certain tumors of the skin such as verrucae and molluscum contagiosum (considered under benign tumors), and has indicated the cause of other diseases of unusual occurrence such as milker s nodules Reiter's disease, Behçet's syndrome, and foot and mouth disease In this discussion, two of the common virus diseases with characteristics of ectodermal trophism are presented

## The Herpetic Infections

These disorders are characterized by the abrupt development of localized grouped vesicles, accompanied by pruritus, burning sensation, or pain

### Herpes Simplex

(Gk *herpo*, I creep)

Herpes simplex known commonly as "cold sore" or "fever blister," is an acute, erythematous and vesicular eruption in which the lesions are grouped The lips and the genitalia are affected most commonly, but the condition may be observed on any part of the body

Symptoms The features are known to all physicians and to most lay

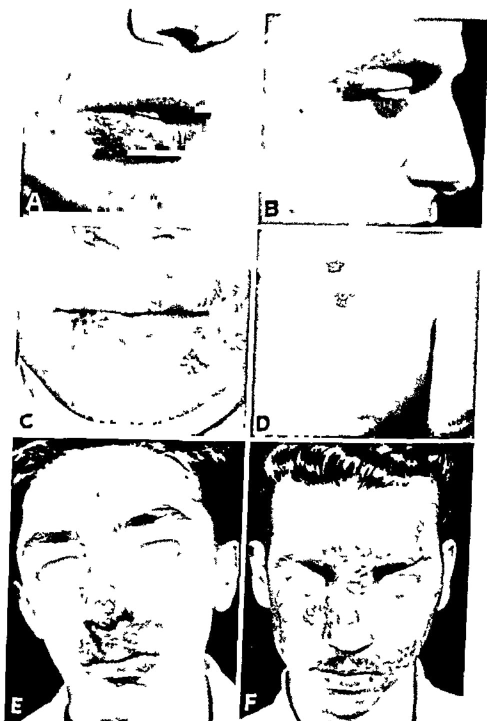


Plate 63

*Herpes Simplex A commonly experienced grouped vesicular eruption* A typical location and appearance of "cold sores" B less common site but typical appearance C multiple lesions recurrent every few weeks this is a therapeutic problem D recurrent herpes of buttock *E secondary pyoderma and irritation following ill advised stimulating* treatment F extensive herpes simplex potentiated by sunburn

persons In most cases there are grouped vesicles on an erythematous base and the diagnosis is simple Often a burning sensation accompanies development of the blisters Spontaneous healing occurs in five to eight days without any residual scarring When the lesions are localized to the genitalia particularly if the involved area is limited and it is the first attack the *differential diagnosis from primary syphilis* may be difficult The absence of a firm satellite lymph node and failure to find *Treponema pallidum* on dark field examination are helpful At times also there may be *some difficulty in distinguishing herpes simplex from herpes zoster*, particularly in children The demonstration of the specific virus is now a routine procedure Virus neutralizing antibodies are present in the blood after a few days There is evidence that some cases at least of erythema multiforme are caused by the herpes simplex virus

In susceptible individuals especially in patients with neurodermatitis (atopic eczema) the herpes simplex virus may cause a widespread febrile vesicular disease known as *Kaposi's varicelliform eruption* (Plate 64 C, D E) Regional lymph nodes are enlarged and the patient may be acutely ill A fatal outcome has occasionally been reported Another disorder, known as *eczema vaccinatum* (Plate 64 A B), with similar clinical features is due to infection with the vaccinia virus This occurs usually in children who have atopic eczema or some other pruritic skin disorder

Etiology Herpes simplex tends to recur either in situ or in some other area The virus is thought to circulate and is probably residually present in most adults It may be transferred by scarification to the cornea of a rabbit Predisposing factors are important and include such agents as

3 F see also Plate 84 C, D

individuals the predisposing

Treatment 1 Irritating topical treatment, such as camphor ice soap or tincture of iodine is contraindicated

2 The application of 10 per cent zinc oxide ointment three times daily is protective

3 *In recurrent cases*, a course of vaccinations with the commercial smallpox vaccine may be *considered* This should be administered once weekly for eight to twelve weeks Moccasin venom by repeated injections may be curative in a small percentage of cases Gamma globulin has been found effective even with *normal* globulin values in the blood There are occasional instances when the expense of its use is justified

4 X ray therapy using low voltage *unfiltered* rays in fractional dosage is sometimes effective in recurrent attacks This therapy should be administered only by a dermatologist

5 *Hydrocortisone ointment is contraindicated*, particularly for lesions in or near the eye because of the danger of corneal

6

warc

zem ould also be kept in mind itus for all ec














Plate 64

[illegible] of

with cowpox virus

## Herpes Zoster

(Gk *herpo* I creep *zoster* girdle)

Herpes zoster or "shingles" is an acute inflammatory condition in which one or more patches of erythema containing groups of vesicopustules appear in a segment of skin innervated by one or more nerves (Plate 65 B)

*Symptoms* Herpes zoster may occur at any age It is of interest that *in children there is rarely pain*, whereas *in elderly patients pain is a fre*quent and often very distressing accompaniment In early adult and middle age pain may or may not be an important feature of the disease The eruption is unilateral appears acutely and may be preceded by some pain tenderness and occasionally a mild fever Erythema develops first followed by the appearance of vesicles which are usually grouped Within a day or two the lesions coalesce and frequently the fluid in the vesicles becomes turbid There may be successive outcroppings After approximately a week the lesions tend to crust over and healing then occurs Residual scarring may be imperceptible but is more frequently permanent depressed and atrophic In many instances particularly in the elderly the pain persists for weeks or months and rarely as long as a year or more When the ophthalmic branch of the trigeminal nerve is affected keratitis with ulceration may occur Two other complications should be mentioned (1) Isolated vesicles at remote sites from the primary location are common occasionally a generalized vesicular (varicelliform) eruption occurs perhaps more commonly in a patient with lymphoblastoma (2) In the *Ramsay-Hunt syndrome*, facial paralysis and pain in the ear indicate involvement of both motor and sensory fibers of the seventh cranial nerve

*Etiology* The virus causing this disease is identical with that causing varicella or at least is very closely related It is possible that herpes zoster represents the reaction to a neurotropic strain of varicella virus in a susceptible individual or is the modified response of one who possesses some immunity conferred by a previous attack of varicella It has also been suggested that the virus circulates in the body after an attack of varicella and that the nerve involvement is a late manifestation the mechanism being similar to that seen in syphilis The disease is observed as a complication of leukemia Hodgkin's disease and other types of lymphoblastoma

*Treatment.* 1 In children and in those adults in whom there is no pain little or no treatment is required It is customary to prescribe neocalamine lotion to be applied two or three times daily Under no circumstances should an irritant drug be applied There is no specific therapy and evaluation of proposed remedies is difficult In cases of severe pain multiple procedures are in order

2 For most patients experiencing severe pain a consultation with a dermatologist is advisable At times hospitalization is required Frequently analgesics or sedatives such as asp [illegible]

[illegible] nd Demerol

[illegible] lock is some

[illegible] es are occasionally effective in treating this disorder

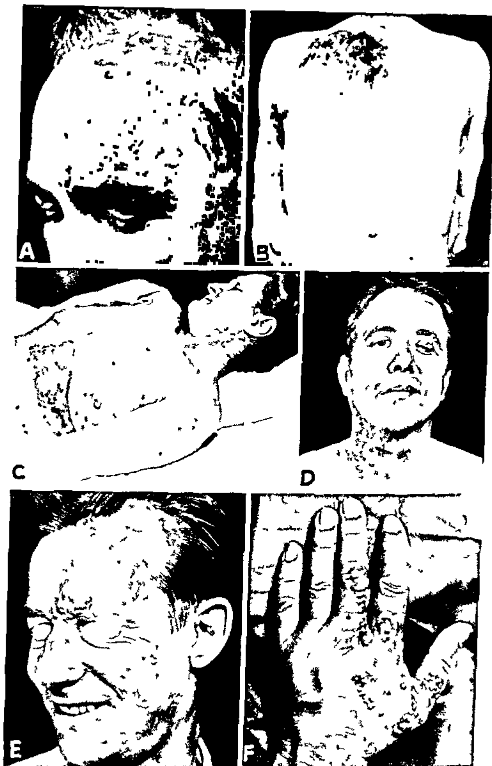


**Plate 65**

***Herpes Zoster*** A *herpes zoster frontalis* the accompanying pain may be severe particularly in elderly patients B the erythematous grouped vesicular lesions follow the course of a peripheral nerve C *herpes zoster* with generalization the band like zone is the original eruption D Ramsay Hunt syndrome with facial paralysis E following resolu [illegible] atrophic sequelae F when located on an [illegible] the diagnosis may be overlooked in favor

(a) Roentgen radiation to the dorsal nerve roots sometimes is a valuable procedure. Filtration of 2 to 3 mm of aluminum is advisable and best results are usually obtained if the dose is fractionated. This of course is a procedure for the dermatologist.

(b) Intravenous injection of 10 per cent solution of sodium iodide starting with an initial dose of 10 cc may be helpful. The injection is repeated the next day using 15 cc and on the third day using 20 cc. This is usually sufficient to bring about the desired result.

(c) Subcutaneous injection of 0.4 to 1 cc of surgical pituitrin every other day for three or four doses is also effective in some patients.

(d) A tetracycline drug may be prescribed if there is secondary bacterial infection. The dose is usually 250 mg given four times daily.

(e) Vitamin $B_{12}$ intramuscularly has some proponents.

(f) Corticotropin gel 40 units intramuscularly repeated for three or four consecutive days may provide prompt relief; there is good circumstantial evidence that it may be responsible for dissemination of lesions. For this reason caution is urged.

(g) Gamma globulin has been tried with debatable success.

# The Acute Exanthemas

These infections are discussed here briefly and chiefly from the viewpoint of differential diagnosis. The salient features should be kept in mind as one's reputation will suffer seriously should such disorders be unrecognized and misdiagnosed.

## Varicella

(L. *varius*, various)

Varicella or *chickenpox* is manifested by a vesicular eruption and a mild constitutional disturbance.

Symptoms. After an incubation period of approximately two weeks the rash appears on the face, scalp or trunk. In two or three days most of the lesions of the initial efflorescence have developed with a marked *predilection for the trunk and scalp*. Successive outcroppings may be observed for several days. The vesicles are thin walled and rupture readily. The resultant crust drops off after seven to ten days. Secondary infection is not uncommon from scratching since pruritus is usually present. The pitting which occasionally follows involution of lesions is thought to be due to this bacterial component. Constitutional symptoms are almost always mild although adults will occasionally complain of malaise. Serious complications are rare.

Differential Diagnosis. The disorder is usually compared with other dermatoses such as drug eruption (iodides or bromides), acute parapsoriasis or papulovesicular urticaria. The short duration, the appearance of lesions in crops and the presence of vesicles or crusts on the trunk and scalp, particularly in a child, are significant features.

With smallpox the constitutional symptoms are pronounced, the

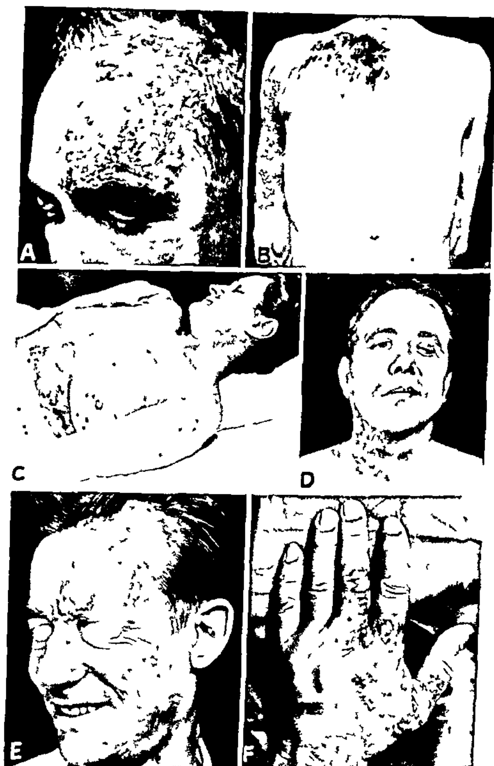



**Plate 65**

*Herpes Zoster* A *herpes zoster frontalis* the accompanying pain may be severe particularly in elderly patients B the erythematous grouped vesicular lesions follow the course of a peripheral nerve C *herpes zoster* with generalization the band like zone is the original eruption D Ramsay Hunt syndrome with facial paralysis E following resolution the affected skin may reveal depigmented atrophic sequelae F when located on an extremity and particularly if pain is minimal the diagnosis may be overlooked in favor of contact dermatitis or some other disorder

## Rubeola
(L. *ruber* red)

Rubeola (morbilli or measles) is a contagious disease with mild to moderately severe systemic symptoms sometimes leaving serious residua

Symptoms The incubation period is from 7 to 18 days usually 14 The initial complaints include *coryza, redness of the eyelids, slight fever, headache, cough and malaise* Adults may have more severe constitutional symptoms The tongue is furred and *Koplik spots* are usually present (90 per cent) on the inner cheeks As the eruption appears on the fourth day the fever subsides The lesions are first noted on the face developing next on the trunk and to a lesser extent on the extremities *The lesions* are erythematous macules and papules which coalesce to form the typical blotchy rash Hemorrhagic components are not uncommon There is usually a leukopenia

Differential Diagnosis In patients exhibiting mild constitutional effects *drug rash* may be suspected (Plate 66 D) Coal tar products are chiefly responsible for such eruptions *Secondary syphilis* particularly the roseola may be distinguished as it is macular there may be a scar at the site of the primary lesion generalized lymphadenopathy is a concomitant feature and either a dark field examination or serologic test would be positive In *scarlet fever* the rash is more uniformly erythematous and the throat is injected

Treatment 1 Antibiotic drugs (penicillin particularly) are used to prevent bacterial complications

2 For relief of severe pruritus antihistamine drugs are helpful

3 Symptomatic therapy under precautionary conditions is usually necessary

4 The course of the disease may be modified by administration of immune globulin

## Rubella
(L. *ruber* red)

*Rubella* or German measles is a mild disorder which may pass unrecognized

Symptoms The incubation period is from two to three weeks *The eruption develops on the first or second day and resembles that of measles* but is usually much less pronounced in many instances *it is sparse* The face is first affected later the trunk Fever is seldom more than mild and various symptoms of *malaise may be present Lymphadenopathy* affecting particularly the postcervical nodes *is almost* always a prominent sign Koplik spots are absent The *disease is a threat to the fetus during* early pregnancy

Differential Diagnosis See the paragraph on differential diagnosis of rubeola supra

Treatment None is required

eruption is centrifugal (more in evidence on upper trunk and extremities), the lesions are umbilicated and become pustular The status in regard to vaccination is also important, as is the presence of other cases in the community

**Etiology.** The virus causing varicella is closely related, if not identical, to the virus of herpes zoster (Plate 66, A) Most patients are children

**Treatment.** 1 Lesions on the face, particularly, should be treated by applications twice daily of neomycin ointment To less important sites, neocalamine lotion may be applied Bathing should be discouraged until the lesions are dry

2 Antihistamines internally will relieve pruritus and keep the patient from scratching and infecting the skin, with the added object of preventing pitted scars

## Variola

(L *varius*, various)

Variola, or smallpox, is a contagious disease with severe toxic manifestations, including a pustular rash which leaves characteristic depressed scars

**Symptoms** The incubation period is in the neighborhood of 12 days Prodromal symptoms include high temperature, headache, backache, and sometimes delirium The initial eruption in 15 to 20 per cent of the patients is morbilliform, spreads over the extremities and trunk, and disappears abruptly Occasionally, a scarlatiniform rash is seen, chiefly on the lower abdomen or thigh ***On the fourth day, the symptoms abate, the fever lessens, and the temperature may even become normal, as the variola exanthem appears.*** This is at first papular, gradually becoming vesicular and, after four days, pustular Edema may be pronounced The temperature again rises, and constitutional symptoms of variable degree are present The face, upper extremities, and the upper trunk are favored by the rash The mature pustular lesions are thick walled, discrete or confluent, become umbilicated, and are multilocular Mucosal lesions are common There is a variable amount of subjective symptoms, consisting of pain and discomfort

**Etiology.** The cause is a filterable virus, and nearly everyone is susceptible to the disease Among aboriginal races, the fatality rate is high Virulence varies considerably with the epidemic Protection from the disease is conferred for a variable period by smallpox vaccination

**Diagnosis.** In this era of rapid transportation travelers to endemic areas may not exhibit the disease until they return home The severe constitutional symptoms should make one suspicious A definite diagnosis may be impossible until the classic eruption develops In mild cases, differentiation from varicella may be difficult

**Treatment.** There is no specific treatment Antibiotics are indicated for secondary bacterial infection Prompt hospitalization and isolation of patient and of contacts are mandatory Prophylaxis by vaccination is still one of the most effective Public Health measures

## Scarlatina

(L. *scarlatum*, scarlet)

Scarlatina, or scarlet fever, is an acute infectious disease with lesions in skin and throat

Symptoms. The incubation period is usually two days but may be as long as seven days The onset is abrupt, the rash appearing on the first or second day as a rule ***Vomiting is a frequent early sign. Fever is high*** and is sustained for two or three days, gradually falling by lysis The tongue is furred, with swollen red papillae (so-called ***strawberry tongue***). The fur soon disappears, and the tongue is then diffusely reddened and swollen (***raspberry tongue***) ***The throat is injected and the tonsils swollen.***

The eruption begins at the neck and gradually spreads over the trunk and extremities The face is flushed, but ***circumoral pallor*** is a distinctive feature The affected skin is dry and warm, and the eruption is confluent and bright red Occasionally minute vesicles develop Petechiae may form and the tourniquet test may be positive Later spontaneous purpuric lesions are not uncommon After a week, the rash fades and for two more weeks the affected skin desquamates

The Dick test is useful in determining susceptibility to scarlet fever

Differential Diagnosis Erythematous eruptions caused by drugs may simulate scarlet fever, but fever, circumoral pallor, and angina are lacking In measles the same holds true, and in addition the incubation period is longer and Koplik's spots are present, the components of the two rashes are also different

Etiology. Scarlet fever is caused by a *strain of hemolytic Streptococcus* Young children are chiefly affected

Treatment *Antibiotic therapy is useful*

## Rickettsialpox

A relatively benign infection, usually *following an insect bite*

Symptoms The site of attack is usually on a covered part of the body Ten days after the bite a papule forms which enlarges and later ulcerates The resultant eschar resembles a vaccination "take" *Systemic symptoms* early in the course include fever, headache, stiff neck and myalgia, a papulovesicular eruption appears at this time The disease runs a short, benign course

Etiology The cause is *Rickettsia akari*, and the vector is a mite often carried by the house mouse, the mite may live in the walls and basements of buildings

Diagnosis Location of initial lesion, the associated symptoms and later vesicular eruption lead to a *presumptive diagnosis* This is confirmed by noting an increased titer in the complement fixation test after three weeks

Treatment is symptomatic

## Rocky Mountain Spotted Fever

A widespread, acute, infectious disease, with purpuric skin lesions and variable often severe *systemic* symptoms

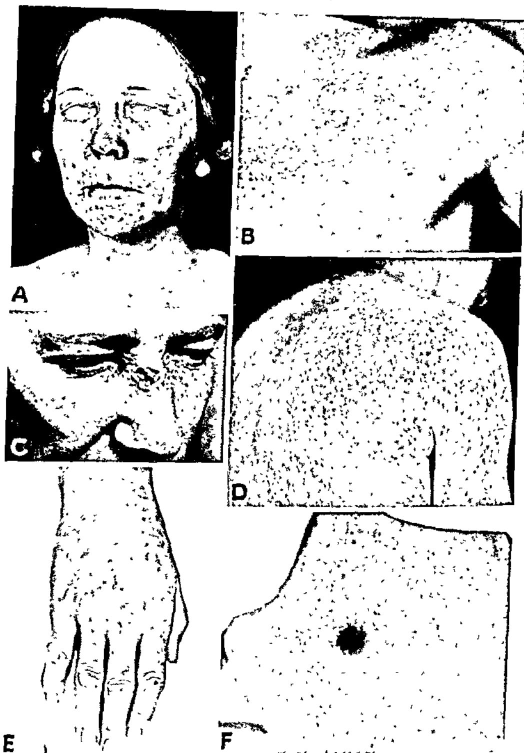



Plate 66

***Virus and Other Infections.*** *Varicella* A, in a nurse whose patient had herpes zoster, B, typical discrete, pruritic vesicles, lesions on the scalp assist the diagnosis C, *leishmaniasis:* indolent ulcer of several months' duration D, *measles·* many drug eruptions simulate the eruption, but the concomitant symptoms are absent. E, *Rocky Mountain spotted fever*, showing discrete purpuric macules F, *rickettsialpox*, the initial lesion has become necrotic

nodes draining the area become enlarged and often suppurate Constitutional symptoms include elevation in temperature and headache, and frequently the patient becomes prostrated

Differential Diagnosis The acuteness and severity of the constitutional symptoms should rule out most other diseases

Etiology. The infection is caused by *Bacillus anthracis* and is chiefly seen in wool sorters, ranchers, tanners, or other persons who come in contact with hides At one time the shaving brush was a common medium for transmission of the disease It is thought that an injury to the skin is necessary before the organism enters

Treatment Penicillin and a tetracycline drug should be administered concurrently

## Leishmaniasis

(after Sir William Leishman)

Cutaneous leishmaniasis, or oriental sore, is endemic in tropical and subtropical countries (Plate 66, C) A visceral form is known as kala-azar

Symptoms Most of the lesions occur on the face. The disease has an incubation period of several weeks, appearing first as a maculopapule which tends to enlarge and finally becomes ulcerated The ulcer is covered with a crust it enlarges gradually, and occasionally satellite lesions appear in the adjacent skin After a period varying from several months to a year or even longer, spontaneous cure occurs, leaving a depressed, pigmented scar Fox noted that about 20 per cent of the patients with South American leishmaniasis tended to develop lesions affecting the mucosa of the nose and throat

Differential Diagnosis The lesions are most apt to be confused with primary syphilis The duration may be much too long for the incubation period of syphilis and the dark field examination will be negative The organism may be identified in smears or in a biopsy section

Etiology The condition is infectious, autoinoculable, and apparently spread by insects as well as by direct contact Children are particularly prone to develop the disease, and then have an immunity for life The causal organism is *Leishmania tropica* The South American (mucocutaneous) form is caused by *Leishmania braziliensis*

Pathology The nodule contains foreign body giant cells and necrotic areas Leishman organisms measure 2 to 4 microns and are found in histiocytes and giant cells

Treatment. Spontaneous cure may be expected Anticipatory inoculation of an indifferent site is sometimes practiced in countries where the disease is common Infiltration with a solution of atabrine or tartar emetic, intravenously, is an effective remedy

## Leprosy

(Gk *lepros*, scaly)

Leprosy, or Hansen's disease, is a chronic, infectious disease of world-wide distribution in which the infective organism has a special predilection for the skin and nervous system

**Symptoms.** Following a short prodromal period, a chill and pain in bones and muscles are first noted The temperature becomes elevated and headache, photophobia and other symptoms develop The eruption appears on the wrists, ankles and back about the third day and within two days becomes generalized At first the macules are erythematous, later becoming purpuric The lesions may remain discrete or become confluent The fatality rate is 20 In favorable cases, the acute course is approximately two weeks

**Etiology.** The causal agent, *Rickettsia rickettsi*, is transmitted chiefly by the wood tick in the far western United States and by the dog tick along the eastern seaboard Rodents may act as reservoirs

**Treatment.** 1 Prompt, gentle removal of ticks, preferably while un engorged, is important prophylactically

2 Anti serum, transfusions and symptomatic measures are advised The antibiotic drugs are useful for bacterial complications

### *Infectious Mononucleosis*

Infectious mononucleosis is not uncommon in childhood and in early adult life The cause has not been determined The clinical features are often not distinctive There are usually ill defined symptoms of fatigue and a recurrent fever of mild degree Glandular swellings may or may not be pronounced Splenomegaly develops Skin lesions are of various types, the most common manifestation being an erythematous macular rash not un like that of syphilitic roseola This may last for only a few days, to be followed by *eruptions of an urticarial or erythema multiforme type* *It is of* interest and importance that the cutaneous expressions in *undulant fever (brucellosis)* *are* quite similar, early in the disease, *a recurrent macular* roseola-like rash is common but is frequently overlooked The eruptions *later in the course are more apt to be of erythema multiforme type*

## Rare Bacterial and Protozoan Diseases

***Anthrax, leishmaniasis,*** and ***leprosy,*** although rare in the continental United States, are more common in other parts of the world, and with speedy transportation many physicians, particularly in the coastal cities are afforded the opportunity to see examples of these diseases Some knowledge of them is therefore of general medical interest, particularly since the clinical manifestations are fairly typical and an alert physician may recog nize them or at least appreciate the possibility of their occurrence

### Anthrax

(Gk *anthrax*, a live coal)

Anthrax is an acute infection of the skin characterized by ***a solitary carbuncle like lesion*** and associated constitutional symptoms

**Symptoms** The onset is abrupt and within a few days the lesion be comes papulobullous The bulla soon ruptures and *the base is noted to be* granulomatous and acutely red with some small vesicopustules at the periphery The lesion is *almost chancre-like in hardness* In addition, lymph




Plate 67

I cou e y o D Da e S bu (IS)

**Symptoms.** There are three varieties of the disease (1) the lepromatous type, (2) the tuberculoid type, and (3) the mixed type

*Lepromatous Type.* At first the lesions are macular, progress is slow, but eventually papules and nodules develop The color is usually dull red to violaceous Through coalescence the ***nodules form plaques.*** Lesions tend to appear in crops ***The site of predilection is the face*** (Plate 67, D), and when well advanced, the lesions have a tendency to produce infiltrations in bandlike formation and nodules This produces, among other pictures the ***leonine facies. Infiltrations of the ear*** are common With progression of the disease other areas of the skin become affected, particularly the extremities and to a lesser degree the trunk The eruptions tend to be symmetrical ***Alopecia of the outer third of the eyebrows*** is a significant diagnostic finding ***Areas of hyperpigmentation*** and ***depigmentation*** are also often noted An associated ***keratitis*** leading to blindness is not unusual Changes in sensation (pain and heat) are sometimes seen, but this finding is not constant

*Tuberculoid Type* In this type ***the skin lesion is apt to be solitary and frequently is a slightly elevated plaque with an atrophic center and an elevated margin*** (Plate 67, B, C) Various contractures may be noted, such as that resulting in so called ***claw hand,*** due to atrophy of the interosseous muscles There is frequently ***lack of pain from pin-prick*** and an ***absence of differentiation between heat and cold*** (the thermal test) Palpation will usually reveal infiltrated and sometimes nodular ***enlargements of peripheral nerves,*** the great auricular (auricularis magnus), the ulnar, and the peroneal being the more commonly affected Hyperpigmentation or depigmentation may also be observed Lymph node enlargement may be detected, as in the lepromatous type This variety may involute spontaneously

*Mixed Type* Features of both lepromatous and tuberculoid leprosy are initially present in this type, those of one usually the lepromatous, later predominating

**Differential Diagnosis.** The lepromatous type of leprosy may be confused with syphilis and leukemia of the skin or other lymphoblastomas It should be remembered that the ***Wassermann reaction is frequently positive in the lepromatous type of leprosy*** The tuberculoid type is most frequently confused with ***syringomyelia*** (Plate 67, A) and may imitate many dermatological conditions such as fixed drug eruption, lichen planus, psoriasis, etc

**Etiology.** Although there is widespread agreement that *Mycobacterium leprae* is the causative agent of leprosy, it is of interest that the leprologists in the Philippines do not so believe The organism has never been cultured, and on many trials the disease has never been reproduced by inoculating material containing the organism It is thought that infection usually occurs before the age of 4 years Vectors have not been definitely incriminated It is believed that prolonged and intimate contact is required before the disease may be transmitted from person to person

**Pathology.** In the lepromatous variety, the granulomatous infiltrate in the upper cutis contains lepra cells which are large foamy histiocytes closely resembling xanthoma cells Acid fast stains reveal the presence of

3 The *sulfone derivatives* (Diasone sodium, Promin, Promizole, and Promacetin) are considered useful and perhaps curative in some cases Diasone and Promin are the most widely used The duration of treatment is a matter of months or years The drugs are usually given to the limit of tolerance, anorexia, anemia, and diarrhea being the usual signs of intolerance

4 Isoniazid, dihydrostreptomycin and other antituberculous drugs have also been found effective

# Venereal Diseases (Other Than Syphilis)

Chancroid, granuloma inguinale, and lymphogranuloma venereum, as well as syphilis, should always be considered in the differentiation of lesions on the genitalia It is not uncommon for two or more of these diseases to occur simultaneously in the same patient

## Chancroid

(L *cancer*, crab)

Chancroid is a superficial condition affecting the external genitalia and secondarily the inguinal lymph nodes (Plate 68, A)

Symptoms. The lesions, shallow, painful ulcers, are usually multiple, beginning two to seven days after sexual exposure In approximately half the cases the regional lymph nodes are also affected, suppurating and breaking down

Etiology. *Hemophilus ducreyi*, the Ducrey bacillus, is the responsible agent

Diagnosis Chancroid is distinguished by the clinical appearance of shallow ulcers of short duration, bubo, and demonstration of the organism in smear The Ducrey skin test, using a commercial vaccine, is specific

Treatment 1 Repeated blood serologic tests to rule out coincidental syphilis are always indicated

2 The disorder usually responds well to therapy with sulfonamides, Aureomycin, Terramycin, or Chloramphenicol Gantrisin, 1 0 gm four times daily for a week or less, usually is sufficient for cure

## Granuloma Inguinale

(L *granulum*, little grain, *inguen*, the groin)

Granuloma inguinale is a chronic, ulcerative, granulomatous disease, usually limited to the region of the genitalia (Plate 68, B)

Symptoms First evidence of the disease is a firm nodule on the external genitalia This gradually enlarges and becomes ulcerated The condition continues to spread and may involve large areas of the genitalia and surrounding skin

Etiology. *Donovania granulomatis* is considered the causative organism, and *Donovan bodies* may be found in the tissue The disease is most prevalent among the Negro population

variable numbers of lepra bacilli Sometimes the bacilli are arranged in clumps and are referred to as globi

*In tuberculoid leprosy, there is a tuberculoid (epithelioid) response* Differentiation from sarcoid may be difficult Lepra bacilli are only occasionally seen

**Special Tests.** 1 ***Pin-prick*** and ***thermal tests*** should be used to determine the presence of anesthesia and lack of distinction between heat and cold These findings are often strictly limited to the lesions themselves

2 ***Serologic test for syphilis*** is positive in a predominant percentage of cases of the lepromatous type

3 ***Demonstration of the leprosy bacillus*** Although the nasal smear is generally used, leprologists usually avoid this site A lesion should be incised and pressure applied until bleeding is arrested The serum is then collected and stained by Ziehl Neelsen's carbolfuchsin technique Numerous organisms are usually readily demonstrated in the lepromatous type of lesion, whereas it is exceptional to find the organism in the tuberculoid type The bacillus may or may not be found in the mixed type

4 ***The histamine test.*** This test reveals a difference in the response of *the skin in a patch of tuberculoid type leprosy and in the apparently normal* skin Intracutaneous injection of 0 1 cc of 1 1,000 histamine diphosphate solution produces in the apparently normal skin a typical wheal and flare In the diseased tissue ***the wheal occurs but not the flare,*** since this is produced by an axon reflex which will not occur if the nerve has been destroyed

5 ***The lepromin test*** Lepromin is material made from tissue rich in leprosy bacilli In contradistinction to tuberculosis, in which an active response *to tuberculin has if anything, a good prognostic implication* in ***lepromatous leprosy there is usually a negative reaction*** to the lepromin test, such patients as a rule having a poor prognosis Again comparing sarcoidosis, in which the reaction to tuberculin is usually strongly negative (anergic) ***patients with tuberculoid leprosy react positively*** to lepromin Tuberculoid leprosy may be considered analogous to sarcoid if the latter disease is indeed caused by the tubercle bacillus The prognosis is good in tuberculoid leprosy provided the reaction to the lepromin test is positive

**The Lepra Reaction** The lepra reaction is an unexpected toxic reaction seen chiefly in debilitated patients and occurring usually, although not necessarily, during vigorous treatment Most such patients have advanced lepromatous leprosy *The reaction is manifested by fever, malaise, erythema* nodosum erythroderma, exfoliation and bulla formation, and may result in death

**Cause of Death** The chief cause of death in leprosy is a *coincidental* tuberculosis Generalized amyloidosis rarely occurs

**Treatment.** 1 The patient should receive general care similar to that given for tuberculosis, including nourishing food adequate rest and good hygienic surroundings

2 Chaulmoogra oil and esters of chaulmoogra oil until recently have been used extensively, although the results have been considered equivocal

**Treatment** The disease responds well in early cases to administration of sulfonamides (Gantrisin) Aureomycin Terramycin or Chloramphenicol In neglected cases one should not expect fibrous bands and strictures to resolve although some functional improvement is often obtained

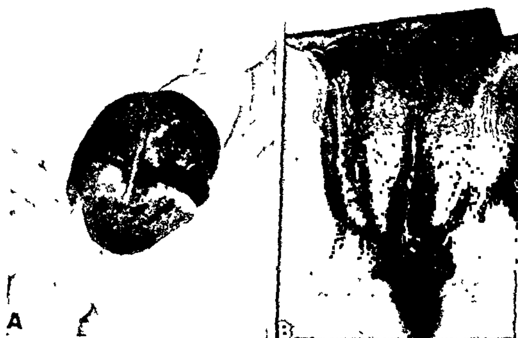



Plate 68

*Venereal Diseases Chancroid* A the ulcer is shallow and non infiltrated lesions are usually multiple *Granuloma inguinale* B, ulcerative, granulomatous exuberant lesion

**Treatment.** Satisfactory response is obtained with dihydrostreptomycin (the choice of many) and also with streptomycin, Aureomycin Terramycin and Chloramphenicol

## Lymphogranuloma Venereum

(Gk *lympha*, lymph)

*In lymphogranuloma venereum the main emphasis is on the lymph node involvement and late cicatricial effects*

**Symptoms** The initial lesion, after the incubation period of approximately two weeks, is a small evanescent papule or vesicle on the genitalia This lesion often disappears spontaneously and rarely enlarges to a conspicuous size After two or more weeks unilateral adenitis occurs, with characteristic matting along the lymphatics draining the site of the original lesion In a variable length of time the enlarged nodes suppurate and fistulous tracts develop The inguinal nodes are involved in the male, but because of the difference in anatomical structure the drainage in females is toward the perirectal area Healing occurs, with development of considerable scar tissue often causing symptoms of rectal stricture in women Although the disorder is usually localized, complicating arthritis has been described

**Etiology.** The causative agent is said to be *Miyagawanella lymphogranulomatis*

**Diagnosis** A specific reaction is to be demonstrated by so-called *Frei* antigen

**Treatment.** The disease responds well, in early cases, to administration of sulfonamides (Gantrisin), Aureomycin, Terramycin, or Chloramphenicol In neglected cases, one should not expect fibrous bands and strictures to resolve, although some functional improvement is often obtained

# Diseases Due to Animal Parasites

THE SKIN is vulnerable to the attack of many types of insects, bugs, and worms Some of the attacks are of exceedingly common occurrence, as, for example, mosquito bites Others are quite rare The following diseases are important because they occur frequently, present distinctive clinical manifestations, or have systemic implications

## Scabies

(L *scabere*, to scratch)

Scabies is a contagious dermatosis causing marked pruritus and having a characteristic distribution (Plate 69) It is commonly known as *"the itch"*

**Symptoms.** The period of incubation is from four to six weeks, during which time there may be no evidence of the disease Following the incubation period, a pruritic eruption develops, characteristically more *bothersome at night.* The itching is often severe enough to keep the patient awake The significant lesion of scabies is a *burrow.* However, in many instances this is not observed, and the examination may disclose only scratched vesicles Typically the scratched lesions are symmetrically distributed affecting by preference *the webs of the fingers, the anterior wrist, the axillary folds, the umbilicus, the female nipple, the glans penis,* and *the lower back.* In neglected cases, lesions may appear widespread over the body On the other hand in private patients and particularly in those who bathe once or twice daily, the lesions are sparse and only one or two areas of skin may be affected In such patients scabies may easily be overlooked Occasionally impetiginous lesions appear as a complication In so-called *Norwegian scabies,* severe crusting is the rule and eosinophilia and albuminuria are usually present

**Etiology.** The disease is always more prevalent during times of war Scabies was an important cause of inefficiency of troops during the Napoleonic wars During and after World Wars I and II scabies became much more widespread and the incidence increased enormously among both the military and the civilian population It is commonly spread by direct con




**Plate 69**

*Scabies* A interdigital burrows and excoriations with some secondary pyoderma B excoriations over abdomen and lesions in the *umbilicus*




**Plate 70**

*Scabies The disease may be readily overlooked* A in this 18 month old child an eruption had been treated six months as allergic B in a boy subject to chorea with numerous traumatic lesions C and D in a patient with tuberculous meningitis a widespread purpuric eruption masked the scabetic lesions until a masseur a nurse's aid and others became infested

tact and once a member of the family is affected other members are almost certain to develop the disease The disease can be acquired from contact with infected bed linen and other inanimate material The causative agent is the *Sarcoptes scabiei* or itch mite Only the female invades the skin

Diagnosis There may be considerable masking of the primary lesions because of the severe pruritus and the tendency of the patient to scratch

Secondary infection is sometimes so severe that the condition has the appearance of a pyoderma. *The distribution should be the determining factor* in implicating scabies. The diagnosis may be confirmed by demonstrating either the ova or the adult female mite under the microscope. Material is taken by scraping with a sharp scalpel, selecting if possible an area where there is very little secondary infection. The material should be pressed out on a glass slide, a drop of potassium hydroxide added, and a cover slip placed on top.

Treatment. It is important in treating scabies to have *all infested members of the family under treatment at the same time.* Preceding any form of therapy, the skin is scrubbed thoroughly in a hot soapy bath and the entire body, from neck to tip of the toes, is rubbed with a coarse towel. Various types of medicaments have proved useful. A satisfactory local application is *benzyl benzoate lotion.* Approximately two ounces of the lotion are necessary for each application. Three or four applications at daily intervals are usually sufficient to bring about a cure. After the last application the skin should be carefully bathed and clean clothing applied. Before discharge the patient should be examined thoroughly for any residual evidence of the disease. Unless all the lesions have resolved there will be a prompt recurrence. As a rule there is no irritation from the use of benzyl benzoate, but occasionally a patient will develop cutaneous sensitivity. If it is necessary to discontinue this drug because of sensitization several other agents are available. Sulfur ointment is effective, but *its use is not often* advised because of the characteristic odor which *necessitates* the patient staying at home during the period of *treatment. If sulfur ointment is used its* concentration should not be higher than 6 *per cent. Furax* and gamma benzene hexachloride, known commercially as Kwell, also are effective and may be used like benzyl benzoate lotion.

## Pediculosis

(L *pediculus* louse)

Three varieties of lice attack the human body, the head louse, the crab louse, and the body louse.

### Pediculosis Capitis

Pediculosis capitis is the name given infestation of the scalp by the head louse, *Pediculus humanus* var *capitis.*

*Symptoms.* The disease may be suspected when there is a complaint of *pruritus localized to the scalp.* Examination may disclose some excoriations over the surface of the *scalp. In adults eczema nuchae* is not uncommon (Plate 71 C). *Impetigo with enlarged* cervical lymph nodes is a frequent complication, particularly *in children* (Plate 71 B). Examination of the scalp hair will disclose *nits (ova) attached* firmly to the hair (Plate 71 A). These cannot be *removed by the fingers* and only with *difficulty* by the nails or with a fine comb. Since the nit is attached to the hair at the level of the scalp, the duration of the infestation *may be estimated* from




Plate 70

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Diagnosis There may be considerable masking of the primary lesions because of the severe pruritus and the tendency of the patient to scratch

per cent emulsion of benzyl benzoate are good remedies Care should be exercised not to overtreat the scalp and produce a dermatitis If impetigo is coincidentally present this disease should be appropriately treated (see Impetigo Contagiosum Chapter 9)

## Pediculosis Pubis

In pediculosis pubis as the name implies the louse *Phthirus pubis* tends to localize in the pubic region (Plate 71 B)

*Symptoms* The nits are laid on the hairs of the pubic region and less commonly on the eyebrows and eyelashes. The presence of this parasite initiates *a considerable degree of pruritus* The patient is commonly overtreated and a secondary dermatitis from blue ointment or other remedy is so common as to be almost part of the syndrome

*Etiology* The disease is usually acquired through sexual contact but occasionally from a toilet seat

Diagnosis The condition is apt to be overlooked because of carelessness in not examining the patient It is not uncommon for a patient to try to mislead the doctor by giving a history indicating a sensitivity or by suggesting that it is an idiopathic pruritus Patients are so apt to overtreat themselves with drugstore remedies that the presenting symptom may be a dermatitis A positive diagnosis can usually be made by microscopic examination of suspected hairs disclosing the attachment of nits Occasionally also the mature louse may be available for inspection

Treatment The extent of the condition should be determined If dermatitis is present soothing ointments such as 10 per cent zinc oxide ointment are applied An ointment also has the virtue of inhibiting the activity of the louse A cream containing 10 per cent xylene may then be applied twice daily to remove the nits The use of a fine comb completes the cure It is seldom necessary to resort to shaving The pediculicides mentioned for pediculosis capitis may also be utilized

## Pediculosis Corporis

Persons with pediculosis corporis or vagabond's disease are usually in the lower strata of society

*Symptoms* The condition is manifested by the presence of *deep linear excoriations* particularly over the trunk (Plate 72 A) These scratch marks are long and tend to be *parallel* Areas of *hyperpigmentation* are not uncommon

Etiology The louse causing this disorder *Pediculus humanus* var *corporis* usually lives in the clothing particularly in the seams attacking the patient only for the purpose of getting food The personal life and habits of most patients leave much to be desired

Diagnosis The diagnosis is confirmed *by examination of the patient's clothing* Numerous nits and occasional lice are usually present in the seams (Plate 72 B) Occasionally a patient confounds the doctor by changing his underwear *before* attending the clinic

*Treatment* The treatment consists in sterilizing the personal clothing




Plate 71

*Pediculosis Pediculosis capitis* A numerous nits are visible B impetiginous lesions frequently develop secondary to scratching especially in children C in adults especially in women a secondary nuchal eczema may result *Pediculosis pubis* D some excoriations may be seen nits are present but are not visible in the picture

the distance of the nit from the scalp At times also lice may be noted crawling over the scalp

Etiology Head lice are seen more commonly in children than in adults and the incidence is greater in girls than in boys Low standards of hygiene contribute to the incidence

Treatment Nits may be dislodged from the hair if 10 per cent xylene ointment is applied daily for several days This dissolves the cement substance holding the nits so that a fine comb will then remove them An emulsion containing DDT 2 to 5 per cent or a powder containing 10 per cent of the same drug is always rapidly effective Eurax Kwell and a 25

## Bites from Bedbugs

With this condition the patient is usually awakened at night or the lesions are discovered in the morning

*Symptoms* The commonest sites for lesions to appear are about the *wrists* and *ankles* but the buttocks shoulders and in fact any part of the body may be invaded The characteristic lesion is *a wheal with a central punctum* Within a few days flattening occurs but the residual erythema or purpura remains for a week or ten days The lesions tend to be asymmetrically distributed and are grouped or linear in arrangement A group of three lesions is particularly significant (Plate 72 C)

*Etiology* The bedbug (*Cimex lectularius*) lives in lumber on walls behind pictures on wooden beds etc The patient may be bitten while sleeping in a strange bed However bedbugs may be carried home in a newspaper and newsstands are thought to be commonly infested Motion picture theaters are also known as a medium of transmission Bedbugs usually migrate from a hiding place at night for the purpose of acquiring food The bedbug has a distinctive obnoxious strong odor particularly noticeable if it is squashed

*Diagnosis* Urticaria is distinguished by the tendency to symmetric development of wheals without central puncta Dermographism is common *Bites from winged insects* occur on exposed areas and with attention called to the invasion by the burning or itching the insect may usually be observed the resultant lesion is urticarial and is more *evanescent* most individuals scratch the lesion until it is excoriated but there is no central punctum *Rat mite dermatitis* produces similar lesions but without tendency to grouping

*Treatment* Some tact is often required in disclosing the diagnosis as there is something about a diagnosis of bedbug bites that most patients resent Local treatment is unimportant but some soothing preparation such as neocalamine lotion may be applied for its calming or antipruritic effect The source and extent of infestation should be determined if possible If a single bedbug was carried home it may be possible to find and destroy the bug If a house is badly infested eradication may require considerable effort but the use of DDT in spray or aerosol bomb now makes this a worthwhile project It is usually possible after repeated sprayings to rid a house of all trace of this pest

## Bites from Chiggers

Chigger bites are seen during the summer months and are a source of great annoyance in certain parts of the country

*Symptoms* The lesions are usually papulovesicular and occasionally hemorrhagic They tend to be localized just above the shoe top and around the belt line but may be observed on other sites Pruritus is severe and there is usually evidence of scratching and frequently of secondary infection

*Etiology* The chigger mite or red bug (*Eutrombicula alfreddugesi*) is barely visible with the naked eye but may be observed as a red dot on

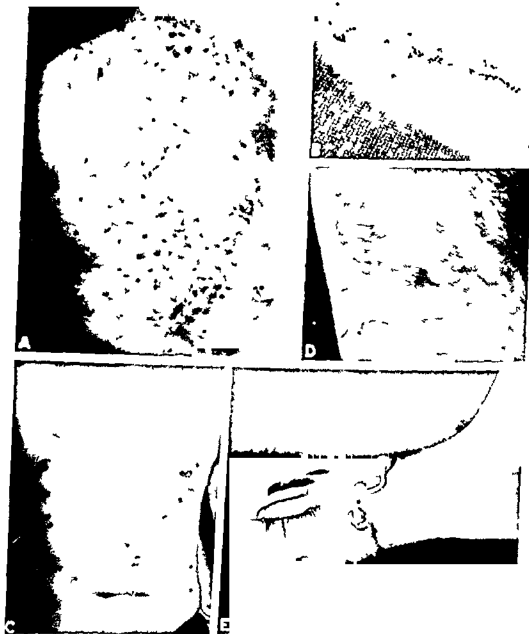


Plate 72

*Infestations Ped culosis corporis or vagabond s disease* A linear parallel scratch marks ind cate the severe associated pruritus B the n ts (eggs) are deposited in the clothing where the louse resides *Bedbug bites* C the erythematous wheals have a central punctum and tend to be grouped (occurrence of three lesions in proximity is especially diagnostic) *Creeping eruption* D progressive serpentine lesion usually acquired on the beach E the manifestations are pronounced

A soothing application such as neocalamine lotion may be prescribed for local use Dusting seams of the clothing with a 5 per cent DDT powder has been useful in controlling the infestation particularly in groups of affected individuals Unless the living conditions of the patient are im proved recurrence is common

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Treatment Some tact is often required in disclosing the diagnosis as there is something about a diagnosis of bedbug bites that most patients resent Local treatment is unimportant but some soothing preparation such as neocalamine lotion may be applied for its calming or antipruritic effect The source and extent of infestation should be determined if possible If a single bedbug was carried home it may be possible to find and destroy the bug If a house is badly infested eradication may require considerable effort but the use of DDT in spray or aerosol bomb now makes this a worthwhile project It is usually possible after repeated sprayings to rid a house of all trace of this pest

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Etiology The chigger mite or red bug (*Eutrombicula alfreddugesi*) is barely visible with the naked eye but may be observed as a red dot on

the skin. The mites are widespread in the southern part of the United States and are found close to the ground on vegetation, particularly in swamps or low-lying land The mites are active during the spring, summer, and fall months

**Differential Diagnosis** The localization is usually diagnostic With a hand lens one may be able to recognize the mite

**Treatment.** A powder containing 1 per cent DDT may be used prophylactically The active disease should be treated by use of a hot sudsy bath, and if secondary infection is present, neomycin ointment should be applied to the infected areas Starch baths, local application of neocalamine lotion, and *antihistamine drugs by mouth sometimes are required to relieve* the pruritus and bring the dermatitis under control

## Bites from Fleas

In addition to their known ability to transmit plague and typhus, fleas may be responsible for a troublesome eruption

**Symptoms.** *The legs are chiefly attacked,* although in susceptible individuals the lesions may be widespread There is an erythematous area with a central punctum Edema may be marked if the patient is markedly *sensitive Hemorrhagic macules remain in situ for a week or more* Pruritus may be intense

**Etiology.** The human flea (*Pulex irritans*), the dog flea, and the cat flea are chiefly responsible The incidence is high in California and southeastern United States The flea usually nests away from the host, seeking food chiefly at night Humans are attacked by dog and cat fleas when the customary host is absent

**Differential Diagnosis** The resemblance to papulovesicular urticaria may be marked The presence of a central punctum and the predilection *for the legs indicate flea bites*

**Treatment.** DDT powder (10 per cent) should be applied to the human or animal host, DDT spray is effective applied to basement floor, carpet etc Antihistamine drugs taken internally may relieve the pruritus

## Creeping Eruption

The manifestations of creeping eruption or larva migrans, are characteristic *consisting of serpentine linear lesions* (*Plate 72, D*)

**Symptoms** The threadlike lesion or lesions usually appear first on an exposed part of the skin The feet, hands, genitalia, and face are particularly vulnerable The lesions progress linearly approximately one inch a day Sometimes itching is a prominent symptom In most cases the disorder remains localized, but occasionally the development of multiple foci results in a widespread eruption

**Etiology** *Although several different parasites have been described it is fairly well agreed that **Ancylostoma braziliense,*** a cat and dog hookworm, is the cause of the disorder The condition is almost always acquired at a beach and is fairly common in parts of Florida, and each summer a few cases are observed in New York and elsewhere along the eastern sea-

board The sand is thought to be polluted by fecal matter of cats and dogs pollution usually occurring under cover of darkness when the beaches are not patrolled

Differential Diagnosis At its inception the linear lesion might be confused with the burrow of *scabies*

Treatment No form of therapy is completely satisfactory Freezing the region of the advancing parasite by means of solid carbon dioxide or ethyl chloride spray is sometimes successful Tartar emetic and fuadin have been found effective at times The antihistamine drugs may be administered if pruritus is severe

## Swimmer's Itch

Swimmer's itch or schistosome dermatitis is a severely pruritic disorder of world wide distribution (Plate 73 A)

Symptoms On first exposure pruritus may be noted, followed by a maculopapular rash which disappears after a few days With subsequent exposures the lesions that appear are more edematous and larger and the resultant pruritus is more severe The lesions occur after *prolonged immersion* in the water In Florida when the skin dries quickly only the bathing trunk area and axillae are involved In crab fisherman the lesions appear on the arms

Etiology The disease is caused by any of several species of Schistosoma, a genus of trematode parasites Human skin is infected accidentally the usual host being a snail The adult lives chiefly in birds which pollute the water The disorder may occur after contact with either salt or fresh water

Treatment 1 Prolonged immersion in polluted water should be avoided

2 Antihistamine drugs taken internally relieve pruritus and promote involution of the lesions

3 Dimethyl phthalate may be applied as a prophylactic

4 Copper salts added to shallow water will help destroy the snails

## Trichiniasis

Trichiniasis is a not uncommon infection in which cutaneous manifestations are usually observed (Plate 73 B)

Etiology In most patients the nematode (*Trichinella spiralis*) invades the gastrointestinal tract through the ingestion of raw or insufficiently cooked pork The encysted larvae are freed and penetrate the mucosa of the small intestine Embryos begin to circulate in the blood a week or more later and lodge in almost all organs and tissues The muscles are particularly vulnerable Cysts eventually form an[illegible]
afte[illegible]

dep[illegible] of living worms ingested

During the stage of invasion diarrhea is almost always present and

A

B

Plate 73

... A erythematous wheal like lesions caused by invasion ... a of face particularly the ... ns

nausea abdominal pain and fever are common Eosinophilia up to 50 per cent or more is characteristic

With migration of the larvae *puffiness* of the eyelids and sometimes of the face and other parts of the body is noted Intense *muscular pain* is a regular feature as are various constitutional symptoms

After six weeks or more coinciding with the encystment of the parasites a flare up in the disorder may occur Various "toxic" eruptions such as urticaria and erythema multiforme may develop

Diagnosis It is frequently difficult to distinguish trichiniasis from *dermatomyositis* which may present a similar clinical picture The skin test becomes specific two weeks after infection A precipitin test is also available Biopsy of involved muscle may reveal larvae

Treatment 1 Prophylaxis consists in avoidance of uncooked pork

2 Treatment of the patient is symptomatic

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# Hyperpigmentation · Depigmentation · Atrophy

## Hyperpigmentation

ALTHOUGH CHIEFLY of cosmetic significance, hyperpigmentation may be observed in a number of important disorders or may be evidence of internal disease In its simplest form diffuse hyperpigmentation occurs after exposure to ultraviolet rays However, there are ***many additional external and internal factors,*** such as exposure to x rays or radium or infrared irradiation (heat), mechanical (traumatic) or chemical irritation (as seen in many chronic pruritic skin diseases such as eczema, dermatitis herpetiformis, and urticaria), endocrine factors (chloasma, melanosis of pregnancy), adrenal dysfunction (Addison's disease), abdominal malignancy (acanthosis nigricans), ingestion of drugs (arsenic) and congenital disorders (xeroderma pigmentosum) Freckling of the skin is due to a localized increase in activity of melanoblasts The same mechanism is also responsible for the increased pigmentation noted in nevi, in melanoma, and in pigmented basal cell epithelioma Melanoblasts are cells which migrate from the neural crest to the basal cell layer The melanocyte-stimulating hormone of the pituitary is of great importance in hyperpigmented dermatoses The hyperpigmentation seen in Addison s disease is due to this hormone The hyperpigmentation noted in stasis dermatitis, with purpura and in part that observed in pruritic dermatoses, are caused by deposition of blood pigment Hyperpigmentation may also be observed from the deposit or absorption of heavy metals from the introduction of foreign bodies (tattoo), from large intake of carotene, and in inborn errors of metabolism such as ochronosis In connection with the diagnostic aspect of pigmentation of the skin in relation to internal disease one might cite the exaggeration of normal pigmentation as well as deposition in mucosa and palmar creases in Addison s disease and the peculiar localization of pigment in the axillae associated with hypertrophic changes in acanthosis nigricans This latter disease will be further discussed (see infra)

Most of the disorders mentioned above are considered elsewhere in the book (consult index) Only five disorders in which hyperpigmentation is a feature are here discussed acanthosis nigricans chloasma carotenemia ochronosis and argyria

## Acanthosis Nigricans

(Gk *akanthos* thorn)

A disorder of middle age often of ominous significance with readily recognizable pigmentary features

Symptoms The lesions frequently localize in the axillae but may occur in other intertriginous areas and occasionally on the flat skin It is usually asymptomatic *Increasing depth of pigmentation* is the basic sign but the skin in the affected patch soon becomes thickened the surface uneven (rugose) and warty excrescences form A juvenile type seen in children is less apparent and is benign

Etiology Women are chiefly involved In over 50 per cent a hidden neoplasm (usually abdominal) is present

Treatment The main concern is *to examine for probable malignancy* elsewhere in the body If a neoplasm is successfully treated there may be some lessening of pigmentation and thinning of the skin

## Chloasma

(Gk *chloa* to become green)

*Chloasma* is a disease of women usually of middle age (Plate 74 C)

Symptoms The condition varies considerably in severity In mild cases the pigmentation is barely perceptible but in pronounced cases the pigmentation may be dark brown The condition is usually symmetric and *limited to the face* affecting the cheeks forehead and chin by *preference*

Etiology Endocrine factors are considered basic The condition may appear first during *pregnancy* It is often accentuated at the time of menstruation although the more severe cases usually appear in the early menopausal period Exposure to sunlight will increase the depth of pigmentation The actual cause is an increase in the deposition of melanin

*Treatment. After* evaluation and examination of the vaginal smear for possible contraindications estrogenic *hormones should* be administered in suitable amounts The *use of white lotion* locally is sometimes helpful *Benoquin* (hydroquinone) has some advocates The depigmentary effect is transitory and there is considerable likelihood of inducing a contact dermatitis

## Carotenemia

This disease with yellow pigmentation resembles and is often mistaken for icterus

Symptoms The yellow color is best observed on the palms and soles but may also be present in the axillae and in the nasolabial folds The blood serum is also colored yellow *the urine is not*

**Differential Diagnosis** The scleras are clear, this, and the localization of pigment, rule out jaundice

**Etiology.** The yellow vegetables, particularly carrots, have probably been eaten in excess. The body fails to synthesize vitamin A from the pro vitamin A, carotene, and the latter is stored Occasionally diabetes is a factor

**Treatment.** The condition usually disappears if less yellow vegetables are consumed The urine should be tested for sugar

## Ochronosis

(Gk *ochros*, pale yellow)

Ochronosis is a rare disorder, with occurrence of gray, brown or black pigmentation Although this may appear diffusely, in most instances limited plaques are observed (Plate 95, F). The ears, scleras, and knuckles are the commonest sites The cartilages are almost all affected, demonstration of the condition in the cartilages of the ear being possible by transillumination The urine turns black on standing

**Etiology.** Ochronosis is a hereditary disease, in which the metabolism of certain amino acids is disturbed Poisoning with phenol may be responsible

**Treatment** Patients with ochronosis should be placed on a low protein diet

## Argyria

(Gk *argyros*, silver)

Although heavy metals are being used less and less in the treatment of disease, arsenic, gold, and silver still have some usefulness The potential danger of storage of these elements in the perivascular regions of the skin should be realized Most important from the cosmetic standpoint is argyria, the pigmentation secondary to storage of silver

**Symptoms** The pigmentation resulting from the storage of silver is of a peculiar, characteristic, metallic gray color The condition is more pronounced on exposed parts of the body, such as the face, and will usually be noted if the nail beds are examined The scleras also are often involved

**Etiology** Most of the cases have occurred from long continued use of nose drops containing a silver preparation or from argyrol instillations in the eye It usually requires several months or even years before noticeable pigmentation develops

**Treatment.** No treatment is successful

# Depigmentation

Relative lack or complete absence of pigment is not uncommonly observed Relative pigmentary deficiency may be noted after involution of certain inflammatory skin disorders, particularly infections, and results from either a toxic inhibition of the activity of the melanoblasts or interception of the ultraviolet rays by the skin lesion acting as a screen Com-

... skin, and may also
... if acquired) in the
... itening of the hair)

may be either premature or physiologic and is ... of similar etiology, namely, malfunctioning of melanoblasts (in this case in the hair matrix) Lack of proper metabolism of tyrosinase with resultant loss of melanin formation is thought to be basic in depigmentation

## Vitiligo

(L. *vitium*, a blemish)

In vitiligo which is acquired after birth pigment is lost in circum-

... r loss of pigment, which may ... areas, or be fairly generalized Because of the greater contrast of the normal skin, the condition is more prominent in summer and in dark skinned individuals The affected skin is quite sensitive to the sun's rays becoming sunburned much more readily than normal skin

Etiology The cause for the functional disturbance of melanoblasts is unknown The condition is not uncommonly associated with alopecia areata In some instances there seems to be a hereditary predisposition Severe sunburn and emotional strain have been mentioned as factors

Differential Diagnosis Loss of pigment due to prolonged contact with rubber containing an antioxidant has been recorded In this condition known as an occupational or contact type of leukoderma the process is strictly limited to points of contact with the rubber and does *not spread* The normal pigmentation returns if contact with rubber is stopped *In fair* individuals it is sometimes difficult to differentiate between the contrast of

...asma the borders are convex In the *Vogt Koyanagi syndrome,* vitiligo is accompanied by uveitis poliosis dysacousia and *alopecia* occasionally one or more of these components may be lacking

Treatment There is no satisfactory or reliable *treatment* At times the pigment regenerates spontaneously Oxypsoralen therapy has achieved some popularity but the results are not predictable There is a capsule for oral therapy and a solution for topical application ...

... of para aminobenzoic acid may be tried The patient is advised to avoid sunburn and repeated exposure to the sun as this will cause hyperpigmentation of the surrounding skin and thereby accentuate the condition




## Plate 74

*Pigmentary Changes* A *vitiligo* complete absence of pigment in patches without other findings B *Vogt Koyanagi Syndrome* in which vitiligo and poliosis are prominent features C, *Chloasma* brown pigmentation limited to the face the skin otherwise is unchanged D localized areas of pigmentation due to pregnancy *Atrophy* E, *macular atrophy of idiopathic type* bladder like lesions symmetrically distributed over lower trunk, the palpating finger meets no resistance and the encircling tissue feels not unlike a hernial ring F, *acrodermatitis chronica atrophicans* the veins appear prominent because of the atrophic skin, the stripping operation or use of sclerosing solutions are contraindicated

# Atrophy of the Skin

Either the epidermis or the dermis in any portion of the cutaneous envelope may be involved in permanent atrophy The process may affect the cutaneous appendages either alone or in conjunction with other skin changes In all instances the effect is permanent

It is customary to describe atrophy either as a primary disease (sui generis) or as secondary to a pre-existing mechanical or trophic factor or to an infection or inflammation in which toxic reaction is evident

## Primary Atrophy

1 Senile atrophy As a consequence of aging of the skin the epidermis (prickle-cell layer) and the elastic and collagen fibers of the cutis shrink This is evidenced clinically by thinning of the skin laxity loss of elasticity and wrinkles with susceptibility to hyperpigmentation and formation of keratoses This condition is induced prematurely by overexposure to ultraviolet rays (sailor s skin or farmer s skin see Chapter 19) and simulated by the effects of damaging doses of roentgen rays or radium

2 Macular atrophy (idiopathic and localized) Two forms which are probably variants of one basic condition are described At first an erythematous macule or deep seated bluish lesion may be noted Eventually the rash includes scattered well demarcated bladder like elevations with a thinned and wrinkled surface or unchanged epidermis depending on the superficiality of the process (Plate 74 E) On palpation the examining finger sinks into the skin and the surrounding tissue feels not unlike a hernial ring The *skin of the trunk* especially the shoulders is most commonly affected

3 Hemiatrophy of the face In this condition all the tissues on one side of the face become atrophic It usually appears early *in life*

4 Acrodermatitis chronica atrophicans This is a diffuse atrophic process chiefly involving the skin of the *extremities* The dorsa of the hands and feet may be affected first but the process soon spreads to the arms or legs or both *Erythema* and edema are soon followed by thinning of the epidermis with consequent wrinkling and more ev[illegible]

of the [illegible]

[illegible] *sufficiently that some observers believe them to be more vulnerable to cancer* (see Plate 74 F) At times fibrous nodules develop The *underlying* bones occasionally also become atrophied Scleroderma may *sometimes* be seen in association with this disease

## Secondary Atrophy

Secondary cutaneous atrophy may result from a diverse number of causes some of which are discussed here

1 Pressure from external source Such pressure must be prolonged for several weeks as that due to a poorly fitted splint or to a plaster of paris

dressing The scutulum of favus and possibly the scale of lupus erythematosus may produce their effects in this way

2 **Pressure from internal source.** The lineae albicantes occurring in pregnancy or after weight reduction are an example of atrophy produced by the stress of internal pressure

3 **Deep infections.** ***Secondary macular atrophy,*** indistinguishable from primary macular atrophy, may follow the involution of certain deep infections of the skin, notably syphilis, tuberculosis, and leprosy

4 **Pyogenic processes.** In ***folliculitis decalvans,*** atrophy of the scalp is secondary to a pyogenic process

5 **Interference with innervation** Atrophy may follow diseases in which the innervation of the skin is interfered with, and is usually diffuse Atrophy may thus result from neural involvement in leprosy as well as follow involution of the granulomatous infiltrate, as noted above Atrophy may also follow neuritis and certain types of paralysis

6 **Destructive physical agents.** Destructive physical agents such as roentgen rays are capable of producing atrophy of all parts of the skin

## Treatment of Atrophic Disorders

There is no way to reverse the atrophic process In acrodermatitis chronica atrophicans, periodic inspection is desirable, since the affected skin may be subject to development of carcinoma The patient should be told not to submit to venous ligation or injections of a sclerosing solution for a mistaken diagnosis of varicosities

*Chapter 16*

# Congenital (Nevoid) Anomalies

CONGENITAL (nevoid) anomalies may be divided into three categories (1) cellular nevi (moles) (2) vascular nevi and (3) nevoid diseases

Nevi may be formed from any portion of the skin Depending on the predominant component lesions are known as the soft or *intradermic nevus*, *nevus pilosus* (hairy mole) *nevus sebaceus* (due to overgrowth of sebaceous gland cells) *syringoma* (sweat gland nevus) *fibroma* (in which fibrous tissue is abnormally increased) *lipoma* (a fatty tumor) *comedo nevus* and *verrucous (hard) nevus*

## Intradermic (Soft) Nevus

Intradermic nevi or common moles are usually present at birth or appear shortly thereafter (Plate 75) Occasionally their appearance is tardy and they may develop even as late as in middle age The ordinary mole is almost universally distributed Nevus cells are probably aberrent melanoblasts

*Symptoms* The common mole varies in structure and clinical appearance this classification including all the benign types The color is usually light brown Occasionally and especially in dark skinned individuals it may be dark brown The lesions are usually multiple and may be present on any part of the body They are not elevated at first but usually become at least slightly elevated above the surface Many contain hair (*nevus pilosus*) and in this connection it may be mentioned that all *hairy moles* are benign as are many that do not contain hair Moles on the exposed parts of the body particularly in young women may offer a cosmetic handicap The common mole is fairly soft in consistency unless a fibrous component is present The majority of nevi are of limited size but in occasional instances *extensive* areas of skin are involved Pigmented hairy moles may cover a sufficient portion of the body to earn the appellation "bathing trunk" or "bathing suit" nevus

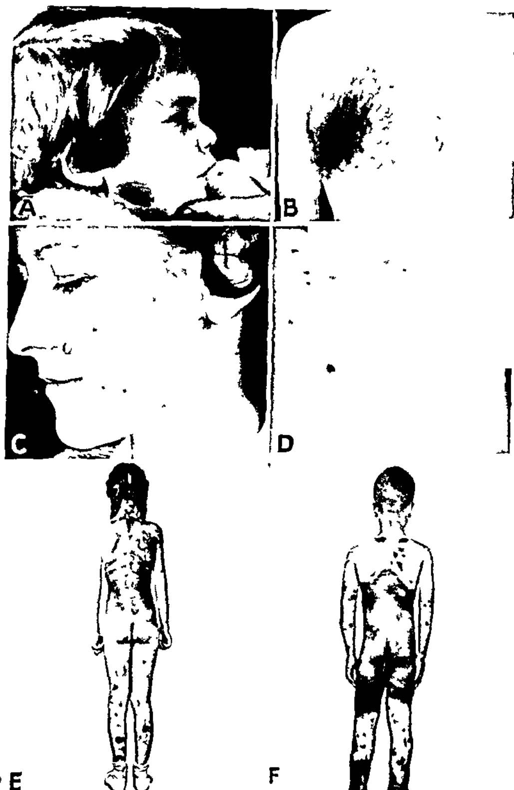



Plate 75

*Intradermic Nevi of varying clinical appearance* A localized pigmented macular lesion, suitable for treatment with solid carbon dioxide B hairy and pigmented nevus probably best left alone C, elevated pigmented mole usually removed by electrodesiccation D, *halo* nevus an area of vitiligo surrounds the mole E and F, examples of extensive (bathing trunk) distribution

**Differential Diagnosis** Common moles should be carefully distinguished from melanomas or from the precancerous lesion junction nevus which is discussed in detail in Chapter 23

**Pathology** Nevus cells are usually arranged in strands and clusters and are separated by fibrosis There is no malignant tendency

**Treatment** The treatment in each case should be decided individually and it is usually best for the decision to be made by a dermatologist Treatment should be carefully considered with due thought for a good cosmetic result There is virtually no danger of malignant degeneration in hairy moles In dealing with a hairy elevated nevus it is often best to *remove the hair by electrolysis* before proceeding to the treatment of the nevus itself When sufficient time has elapsed to know that the hairs are all epilated successfully the mole may then be destroyed by either electrolysis or *superficial electrodesiccation* Another treatment of hairy moles consists in application of *solid carbon dioxide* A pencil of snow is applied directly to the nevus with pressure for 30 seconds or longer A number of treatments are usually required to bring the mole level with the surface of the skin In suitable locations *surgical excision* may be the method of choice Surgery should always be used when there is any possibility of a junction nevus (see Chapter 23)

## Verrucous (Hard) Nevus

In the verrucous nevus nevus cells are not found and the chief changes are observed in the epidermis

**Symptoms** This disorder may vary in extent (Plate 77 A B) from a small limited plaque to the exceptional generalized condition *ichthyosis hystrix* In most cases the eruption is limited to one part of the body and has a tendency to *linear distribution,* extending *along a limb* or along the lines of cleavage on the trunk (nevus unius lateris) The palms and soles are occasionally affected in a similar nevoid disorder (*keratosis palmaris et plantaris*) (Plate 76) In all forms the affected skin is pigmented various shades of brown is elevated and rough surfaced and warty On palpation the lesions are firm A peculiar localized hyperkeratotic and atrophic disorder inherited and slowly progressive is known as *porokeratosis*

**Treatment.** The condition is often best left alone If the disorder is of cosmetic importance or interferes with work electrodesiccation may be undertaken Limited areas are occasionally amenable to surgical *excision* X rays and radium are not effective

## Dermatosis Papulosa Nigra

The lesions in this disorder (Plate 77 C) which is peculiar to negroid races appear in childhood with a gradual increase in number over several years The upper cheeks are chiefly affected Hyperpigmented papules develop and remain discrete and small Superficial electrodesiccation may be cautiously undertaken

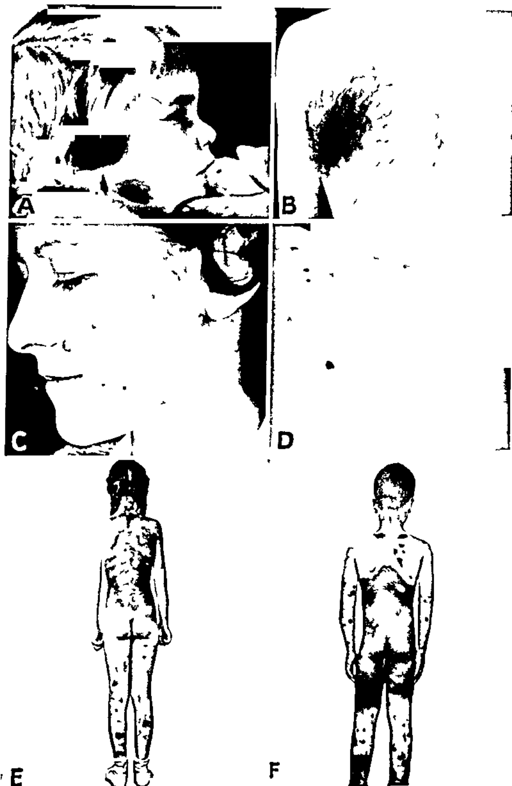



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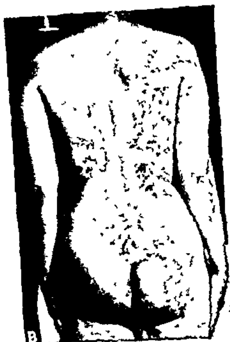






Plate 77

Nevi A *verrucous linear nevus* present since birth B *verrucous nevus* extensive distribution C *dermatitis papulosa nigra* D *sebaceous nevus* in a favorite location, tumor is lobulated

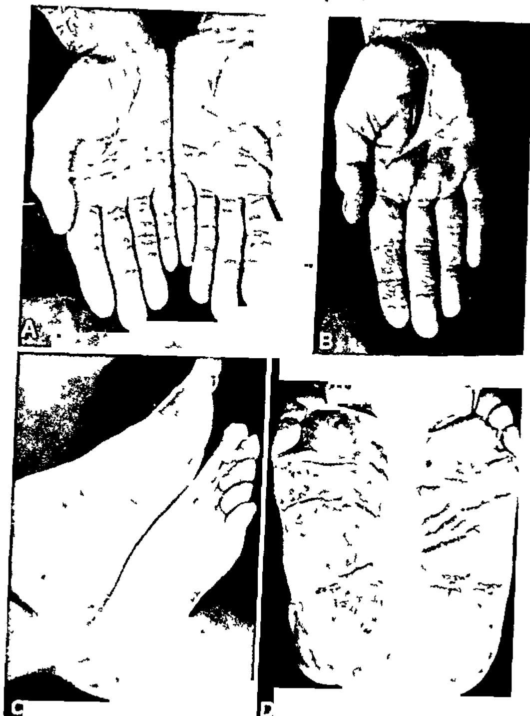



Plate 76

*Keratotic Eruptions of Palms and Soles* A *keratosis palmaris (et plantaris)* a congenital and often hereditary thickening of the stratum corneum B effect of chronic chemical irritation C in *psoriasis* of the soles (and palms) the inflammatory features of the disease may not be apparent D the painful callous like eruption of *keratoderma climactericum* may appear at the menopause

## Sebaceous Nevus

The sebaceous nevus is a localized benign tumor consisting of sebaceous gland structure (Plate 77 D)

**Symptoms** The face scalp and back are the usual sites The area occupied by the lesion is hairless and may vary from a few millimeters to

metic result, particularly on the scalp Multiple lesions may be destroyed by electrodesiccation

## Vascular Nevus

Vascular nevi or blood vessel birthmarks, may appear in localized or extensive areas and the capillaries, veins or lymph channels may be involved (Plates 78, 79)




Plate 79

*Vascular Ne*[illegible]
diffic[illegible] B[illegible]
to [illegible]
wit[illegible]
nec[illegible]

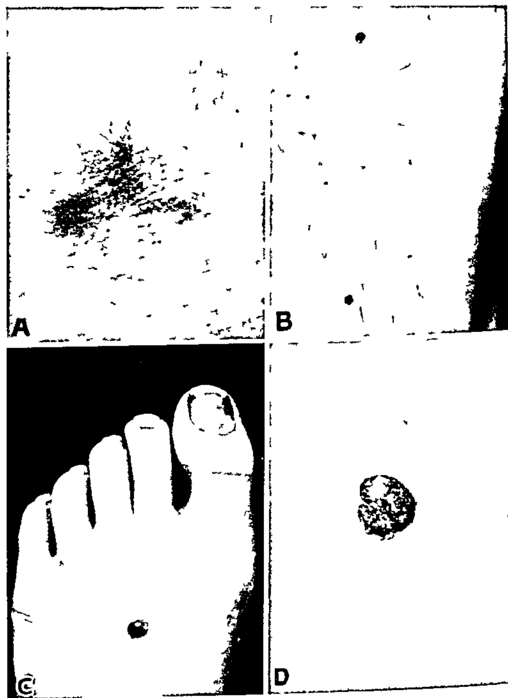



Plate 78

*Localized Vascular Nevi All lesions appeared spontaneously without adequate reason and were all readily destroyed by electrodesiccation A nevus araneus or spider nevus* B multiple bright red puncta C solitary *angioma* often confused with blue nevus D *angioma* with limited growth

several centimeters in diameter The lesion is soft yellowish in color elevated above the skin surface and often lobulated

**Differential Diagnosis** In color a sebaceous nevus may resemble xanthomatous lesions the latter are often macular and not lobulated

**Treatment** For solitary lesions surgical excision gives the best cos

## Ichthyosis

Ichthyosis is a congenital hyperkeratosis or hypertrophy of the horny layer of the skin (Plate 80 C D)

Symptoms The condition usually becomes apparent within the first two years of life In its simplest form the patient experiences dry skin which may be noticeable or apparent only during the cold months of the year as chapping of the hands and dryness over the extremities especially




Plate 80

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f ng
lso

*Symptoms* If only the more superficial capillaries are affected the condition is not elevated and is known as ***nevus flammeus, or port wine stain*** (Plate 79, A) In some instances it may involve one-half of the face, *and in these cases there may be a coincidental atrophy of the underlying* bony structure (***hemiatrophy of the face***). At other times the lesion may involve deeper blood vessels in the skin The lesions, then, are elevated above the surface (***so called strawberry mark***) or may become ***subcutaneous angiomas*** When the process is superficial the color is bright red In the deeper lesions the extent of the tumor may be manifested by a bluish discoloration associated with swelling The condition tends to progress, *usually up to the age of one year but sometimes longer, and then stops*

**Treatment.** Nevus flammeus of considerable extent or on an exposed area is a disfiguring condition Active treatment will be urged by the relatives of the patient but should be undertaken with care since destructive remedies will only make the condition worse The patient is often best advised to cover the area with one of several commercial cosmetic preparations now available With the passage of years many of the lesions become *less conspicuous Since the treatment of all vascular nevi requires* considerable skill in order to obtain the best results, practical experience should be obtained before undertaking to treat such patients There are many remedies for treatment of the deep seated or elevated growing varieties The ones usually employed are (1) radium, (2) solid carbon dioxide (3) injection with sclerosing substances, and (4) surgical excision Although some vascular nevi tend to disappear spontaneously, this does not occur invariably, treatment is usually advised, particularly if the tumor is developing and is in a location of cosmetic importance

# Nevoid Diseases

In addition to the localized lesions described above, defects and diseases of the skin may occur at or shortly after birth The cause is on a congenital and often hereditary, basis Eight such disorders will be discussed It should be mentioned that the number of nevoid diseases is large

## Keratosis Pilaris

*Keratosis pilaris is a common disorder in which minute follicular,* skin colored papules develop (Plate 80 A)

**Symptoms** The lesions are found chiefly on the extensor surfaces of the arms and across the buttocks but occasionally are more generally distributed There is little or no inflammatory reaction, and usually no subjective symptoms The appearance is that of exaggerated "goose flesh" the minute elevations being capped by a horny plug

**Etiology.** The condition appears mainly in winter and is most common in patients with dry skins There is a familial tendency Vitamin A deficiency may be important in some cases

**Treatment.** Use of a bland cream and of a soap substitute constitutes the usual treatment

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Plate 80

*Keroid Diseases* A *keratosis pilaris* the minute skin colored papules favor the extensor surfaces of the arms and legs B keratotic papules in a patient with *mycosis fungoides* *Ichthyosis* C excessively dry skin with formation of scales D the lesions may also occur on the trunk

*Symptoms.* If only the more superficial capillaries are affected, the condition is not elevated and is known as *nevus flammeus, or port wine stain* (Plate 79, A) In some instances it may involve one half of the face, and in these cases there may be a coincidental atrophy of the underlying bony structure (*hemiatrophy of the face*). At other times the lesion may involve deeper blood vessels in the skin The lesions, then, are elevated above the surface (*so called strawberry mark*) or may become *subcutaneous angiomas.* When the process is superficial the color is bright red In the deeper lesions the extent of the tumor may be manifested by a bluish discoloration associated with swelling The condition tends to progress usually up to the age of one year but sometimes longer, and then stops

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Treatment Use of a bland cream and of a soap substitute constitutes the usual treatment

## Ehlers Danlos Syndrome

Marked distensibility of the skin is the prominent symptom in the Ehlers Danlos syndrome

Symptoms On palpation the skin has the feel of rubber and it may be *stretched abnormally* This condition may affect only one region such as the face or may be generalized A second component of the syndrome is *hyperextensibility of the joints*, particularly of the fingers A third peculiarity is *fragility of blood vessels* which results in formation of hematomas after slight trauma Since the subcutaneous fat is reduced there is less protection to the underlying structures

Etiology The condition is often hereditary

Treatment No specific therapy is available Patient should avoid trauma and participation in rough competitive sports should be discouraged

## Epidermolysis Bullosa

In epidermolysis bullosa vesicles or bullae are produced by even slight trauma (Plate 81 B)

Symptoms There are two varieties In the *simple form,* a blister characteristically develops at the site of trauma and heals after several days without a scar This condition usually appears early in life and often disappears at puberty In the *dystrophic form* the lesions also appear after trauma occurring on sites such as the hand elbows and knees but the *process is* deeper and scarring and pigmentation usually remain after their involution Occasionally epidermolysis bullosa develops later in life and is then known as the acquired type

Pathology There is separation of the epidermis from the *dermis and* no inflammatory reaction The elastic tissue is variably deficient or fragmented

Diagnosis Pemphigus is sometimes confused The spontaneous appearance of bullae the age of the *patient* and the sites of involvement in that disorder serve to distinguish it

Treatment An attempt should be made to classify the disease as simple or dystrophic In the first type the prognosis is m... in the latter The ...
petitive sport
periences are

## Keratosis Follicularis

Keratosis follicularis or Darier s disease develops during childhood and reveals a characteristic clinical picture (Plate 81 C)

Symptoms The first lesions are seen ... alp and face and de ... inguinal region The ... *large portions of the* ... are often extensively altered The first lesions are small papules which coalesce and become covered with crusts In time the le

the extensor surfaces The face and the flexor surfaces may be spared In more severe instances, the dryness is also apparent during the summer months, and in addition there is scaling The *scale is often quadrilateral or diamond shaped*, with a dirty-gray color, and on close inspection is noted to be attached near the center, with a free margin Sweating is usually reduced *Keratosis pilaris* is often present The nails are dry and brittle Patients with ichthyosis are more susceptible to chapping and to contact eczema, patients may also develop pyogenic infections

**Etiology.** *The disorder is inherited as a simple dominant characteristic*, rarely as a sex-linked recessive The incidence is the same in both sexes

**Pathology.** Moderate to extreme hyperkeratosis is present The epidermis may be alternately acanthotic and thinned The granular layer is imperfectly formed or is absent The sebaceous and sweat glands may be absent or reduced The follicles are plugged with horny material The subcutaneous fat is atrophied

**Diagnosis** The condition may be overlooked when it is of mild degree In more severe manifestations, the features are fairly characteristic, as is the localization on the extensor surfaces of the extremities The presence of a secondary eczematous eruption may cause some confusion

**Treatment** There is no cure However, the condition may be greatly relieved during the winter months by use of warm clothing, bathing less frequently, and liberal application of an emollient preparation at regular intervals This means every day in some patients and once or twice weekly in others The benefit to be obtained from any single emollient cream also varies considerably One patient may do very well on toilet lanolin, and another will have much better effects from application of solid Albolene Sometimes one of the newer ointment bases will produce the best results Some patients have a low basal metabolic rate, and in such patients the administration of thyroid extract is occasionally helpful The oral administration of vitamin A 50,000 to 100,000 units daily, may be tried

## Adenoma Sebaceum

In adenoma sebaceum a characteristic eruption appears on the face (Plate 81 A) This is part of a syndrome known as *epiloia.*

**Symptoms.** The lesions appearing at any time from birth to puberty, are waxy, yellowish red papules which slowly enlarge but rarely become more than 0 5 cm in diameter There is usually associated telangiectasia Subungual fibromas frequently develop Neurologic symptoms and signs are not uncommon Mental deficiency and epilepsy due to tuberous sclerosis are frequent Tumors may also appear in other organs such as the kidneys and heart The lesions are chiefly seen on the inner aspect of the cheeks and nose In the Balzer type the sebaceous glands are predominantly affected, whereas in the Pringle type the blood vessels in the skin are dilated in addition

**Treatment.** The lesions of adenoma sebaceum may be destroyed by electrodesiccation, electrolysis or dermabrasion

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Pathology There is separation of the epidermis from the dermis and no inflammatory reaction The elastic tissue is variably deficient or fragmented

Diagnosis Pemphigus is sometimes confused The spontaneous appearance of bullae the age of the patient and the sites of involvement in that disorder serve to distinguish it

Treatment An attempt should be made to classify the disease as simple or dystrophic In the first type the prognosis is much better than in the latter The

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## Keratosis Follicularis

Keratosis follicularis or Darier s disease develops during childhood and reveals a characteristic clinical picture (Plate 81 C)

Symptoms The first lesions are seen on the scalp and face and develop on the front of the chest and frequently in the inguinal region The condition progresses gradually and *eventually covers large portions of the body* The nails are often extensively altered The first lesions are small papules which coalesce and become covered with crusts In time the le

sions are plaque like and develop *into* large tumefactions The backs of the hands are *often* involved in a papular eruption

**Etiology** Most of the patients are males The disease is considered to be due in part at least to a vitamin A deficiency Nearly all the patients show a tendency to exacerbation in the summer probably because of sweat retention




Plate 81

*Ne o d Diseases* A *ade o a sebace im* the les ons sually appear on the n ddle c na C *keratos s al defect* lys




Plate 82

*Unusual Nero d D seases* A early ves cular les ons of incont nentia p gi enti S e p gmentat on has appeared B *t rt caria pigmentosa* of adult type pers sts in Iefin tely C *cut s vert cis gyrata* D a plaque of *porokeratosis* with typ cal scalloped bor ler

Pathology The characterist c picture reveals "corps Ronds" in the granular layer and "grains" in the stratum corneum

Treatment Large doses of vitamin A will often bring the condition under part al control

## Congenital Ectodermal Defect

In congenital ectodermal defect there are various deficiencies in development of the epidermis or its appendages (Plate 81 D)

Symptoms The most common finding is *absence or malformation of nails and teeth with or without loss of hair* In the complete form all these structures are involved together with *lack of sweat and sebaceous glands* The skin is dry and smooth Other changes recorded include mongolian

sions are plaque like and develop into large tumefactions The backs of the hands are often involved in a papular eruption

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Plate 81

Nevoid Diseases A *adenoma sebaceum* the lesions usually appear on the middle third of the face B *epidermolysis bullosa* blisters develop at points of trauma C *keratosis follicularis* grouped papular lesions over trunk D *congenital ectodermal defect* dystrophic nails and paucity of scalp hair the teeth also were malformed

*Chapter 17*

# Disorders of the Mucous Membranes

THE TRAINED dermatologist never neglects to examine the mucous membranes when there is any doubt of the diagnosis of a cutaneous disease He is thus able, frequently, to help confirm the diagnosis or to obtain information not ascertainable from the skin lesions alone Skin disorders in which lesions of the mucous membranes occasionally or frequently occur include lichen planus lupus erythematosus syphilis, drug eruptions, erythema multiforme and pemphigus as well as many other diseases less commonly seen It should also be kept in mind that lesions on the oral or genital mucosa may be the first evidence of a systemic disease, such as leukemia or pernicious anemia In addition, there are a number of conditions peculiar to the mucous membranes particularly of the mouth and some of these will now be discussed

## Aphthous Stomatitis

(Gk *aphtha*, ulceration *stoma*, mouth)

In aphthous stomatitis one or more localized painful ulcerative lesions appear on the gingivae or buccal mucosa inner lips or tongue The lesions begin to regress after a few days and heal spontaneously

Differential Diagnosis A more severe disorder, ***periadenitis mucosa necrotica recurrens***, may involve similar sites, but the lesions have a central core When this is extruded a deep pit is left

Etiology Allergic reactions to food, a chemical burn from particles of toothpaste and emotional factors should be considered If a virus is responsible it is not that of herpes simplex

Treatment Aqueous silver nitrate, 1 per cent may be painted on the lesion If lesions continue to develop either repeated smallpox vaccinations or administration of moccasin venom occasionally help In severe and persistent instances psychiatric evaluation should be obtained

## Burning Tongue

The patient complains of a burning sensation, limited to the tongue, which may be severe enough to interfere with sleep Examination usually fails to reveal any gross clinical abnormality (Plate 83 A)

facies, rhagades at the angles of the mouth, saddle nose, telangiectasia high palatine arch, adenoma sebaceum, and thick lips

**Etiology.** The disorder is familial

**Treatment.** Treatment is symptomatic

## Urticaria Pigmentosa (Mastocytosis)

The pigmented lesions of urticaria pigmentosa appear subsequent to wheals (Plate 82, B)

**Symptoms** The lesions are usually discrete and consist of *hyper pigmented macules* or slightly elevated papules Stroking of the skin produces *urtication,* usually limited to the lesions Occasionally mast cell infiltrations of the bones, of the liver and of other organs may occur There is a tendency to self-limitation of the disease (at puberty)

**Etiology.** The cause of the condition is unknown It occurs usually in infants or in young children, although *occasionally adults are affected* Rubbing the skin is thought to liberate the histamine in mast cell granules This acts on capillaries to produce dilatation and loss of serum with resultant edema

**Pathology.** Mast cells in sparse or large numbers are present in the upper cutis The mast cell contains heparin and histamine

**Treatment** If pruritus is bothersome, antihistamine therapy may be tried

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**Pathology.** Mast cells in sparse or large numbers are present in the upper cutis The mast cell contains heparin and histamine

**Treatment** If pruritus is bothersome, antihistamine therapy may be tried

Etiology This condition is considered to be a psychosomatic disorder

Differential Diagnosis In the burning tongue of pernicious anemia there is usually some redness and frequently the tongue is smooth

Treatment 1 A complete blood count should be performed

2 Some effort should be made to discover an underlying psychic factor Reassurance that the condition is benign and will eventually disappear is often followed by improvement Referral to a psychiatrist should be considered

3 X ray treatment (four fractional doses at weekly intervals) is sometimes effective

4 A bland mouthwash should be prescribed

## Geographic Tongue

Geographic tongue or wandering rash is a recurrent superficial migratory rash of the tongue with the formation of transitory benign plaques in a constantly changing pattern (Plate 83 C)

Symptoms There are usually no subjective symptoms The eruption varies from day to day forming geographic patterns due to a temporary loss of papillae

Etiology The cause is neither an infection nor an allergic reaction Most cases appear to be of psychosomatic origin

Treatment Repeated reassurance of its benign nature often is necessary Eventually the condition disappears

## Black, Hairy Tongue

Lingua nigra or black hairy tongue is a localized condition without systemic symptoms marked by overgrowth of papillae on the dorsum of the tongue (Plate 83 D)

Symptoms The area affected may vary from the size of a dime to almost the entire dorsum of the tongue The two striking components of the condition are the color which varies from brown to black and the great length of the papillae The condition may disappear spontaneously

Differential Diagnosis Ingestion of various medicines such as a tetracycline drug may cause similar discoloration but enlargement of the papillae is absent

Etiology The cause of the condition is unknown Various bacteria and fungi have been isolated and are credited with pigment formation

Treatment Trichloracetic acid may be painted on to produce exfoliation

## Fordyce's Disease

Fordyce's disease is often discovered accidentally The patient sometimes thinks he has cancer

Symptoms Small pinhead sized white or yellow macules or papules are noted bilaterally on the lips or on the oral mucous membrane opposite the molars These are in reality dilated or ectopic sebaceous glands

Treatment No treatment is indicated

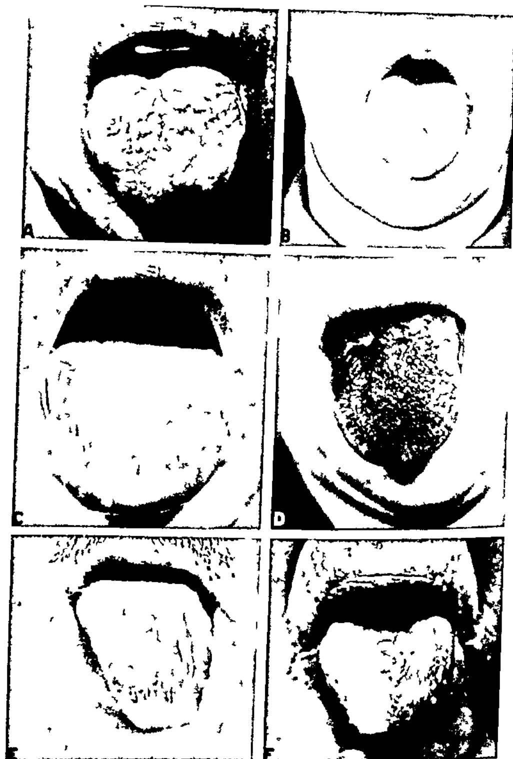



**Plate 83**

*Disorders of the Lingual Mucosa* A *burning tongue* associated with glossitis often the tongue appears normal B smooth red tongue often edematous as observed in moniliasis C *geographic tongue* or transitory benign plaques the pattern is constantly changing D *black hairy tongue* E *leukoplakia* of the tip of the tongue in association with the smooth atrophy of syphilis F *leukoplakia* of diffuse extent this should be considered a precancerous condition

and erythema may be prominent and there is usually some vesiculation and crusting The lesions may cause a burning sensation At times the secretion of sticky mucoid material results in the lips being stuck together during sleep

Etiology Various factors may be important Some of the patients develop cheilitis because of a sensitivity to lipstick or other cosmetics or to other substance with which they come in contact such as toothpaste In others the condition has some of the features of localized atopic eczema and is considered a manifestation of that disorder A habit of licking the lips may be important

Treatment In several instances when sensitivity to a contact substance has been eliminated as a possibility a good therapeutic response has been obtained from the local or systemic use of antihistamine drugs Hydrocortisone ointment 1 per cent may be tried

## Leukoplakia

(Gk leukos white + plax a plain)

Leukoplakia or smoker s patches is a potentially serious disease of the mucous membranes (Plate 83 E F)

Symptoms Leukoplakia is evidenced by the *development of white* patches on any part of the buccal mucosa but particularly on the *lower* lip the tongue and the inner cheeks They tend to spread slowly and in months thickening occurs and the surface of the plaque may become keratotic It is then only a matter of time until epithelioma of the *prickle cell* type develops this is extremely menacing as metastasis occurs readily from the mucous membranes

Etiology In a high percentage of patients the chief cause is tobacco Additional factors are poorly fitting *dentures* and poor mouth hygiene Syphilis has been blamed in the past but this no longer appears to be more than an occasional coincidental *occurrence*

Pathology There is hyperkeratosis acanthosis and a pronounced inflammatory reaction with plasma cells in the upper cutis

*Diagnosis* Th

lesions of lichen

on the inner chee

a generalized cut not necessarily so The lesion of leukoplakia fluoresces under the Wood light whereas that of lichen planus does not In all instances in which *keratotic* thickening has occurred a biopsy to detect early carcinomatous change is very important

Treatment 1 In the early stages all that is necessary is to stop smoking and remove all irritating factors The tissues then often revert to normal Tobacco in any form must be permanently banned

2 Poor mouth hygiene should be corrected

3 A

4 Or eals

5 W be prescribed

as developed the patient should be treated for a serious premalignant disorder Consultation is advisable Following

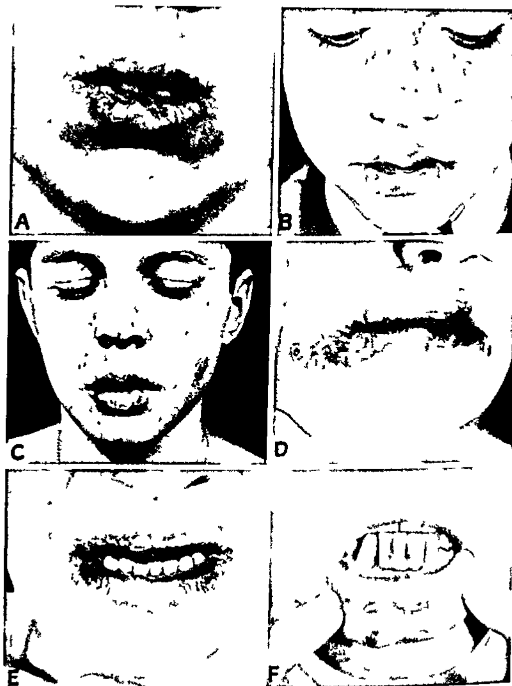



Plate 84

*Inflammations of the Lower Lip* A *cheilitis* due to contact sensitivity (lipstick) B *cheilitis traumatica* due to mannerism of biting lip C *herpes simplex* following exposure to sun D herpetic eruption in a patient with meningococcemia E vesicular crusted eruption from phenobarbital F *cheilitis glandularis*

## Cheilitis

(Gk *cheilos* a lip)

Cheilitis is an inflammatory disorder of the lips particularly affecting the lower lip (Plate 84 A B)

Symptoms The condition varies widely in different patients Edema

*Chapter 18*

# Diseases of the Nails and Hair

THE NAILS and the hair as appendages of the skin and derived from it are also subject to many of the disorders involving the skin Fungus infections of both the nails and the hair have already been mentioned Many of the dermatophytes have a particular predisposition to involve these structures *Candida albicans* does not invade the hair shaft but is a frequent inhabitant of paronychial tissues causing *chronic paronychia*, it may also attack the nail plate Pyogenic bacteria not infrequently invade the pilosebaceous apparatus causing a variety of infections They may also attack the soft tissues at the base and sides of the nail causing acute inflammation known as *acute paronychia* (see Chapter 9 The Pyodermas) Psoriasis is capable of producing changes in the nails (pitting separation etc ) The nails and the hair also are subject to conditions which are peculiar to them It should be remembered that examination of the nails and hair may yield significant information in regard to the *patients general health*

## Diseases of the Nails

Several diseases of the nails are briefly described below

### Onychodystrophy

(Gk *onyx* nail + *dys* + *trophe* nourishment)

1 Hypertrophy Hypertrophy of the nail plate is known as *onychauxis* The usual finding is a somewhat thickened nail with irregular surface Color and texture are normal The condition may be caused by eczema involving the surrounding skin but more frequently is of traumatic origin It may at times be an accompaniment of psoriasis or another skin disease As the result of *injury the great toenails* may become grossly distorted unevenly thickened and otherwise *deformed* This is known as *onychogryphosis* (Plate 86 B) Thickening of the nail plate is due to increased production of hard keratin by *the nail matrix*

*Treatment* If there is considerable pain evulsion of a nail may be

biopsy, small lesions may be destroyed by electrosurgery Extensive areas may require surgical excision, sometimes with plastic repair

6 All patients should be kept under periodic observation for several years after the condition has entirely resolved

## Vincent's Infection

Vincent's infection is a painful infection of the gingivae

**Symptoms.** The patient complains of pain, particularly on eating Examination discloses redness, exudation, and edema in localized or, in neglected instances, widespread areas of the gingivae, particularly near the gum margin

**Etiology.** Although there is disagreement on the question, a fusiform bacillus and a spirochete (*Fusobacterium plauti-vincenti* and *Borrelia vincentii*) are considered to act in symbiosis to cause the disease

**Differential Diagnosis.** The acute onset and painful lesions of the gingivae in young children when accompanied by high fever may be a form of primary herpes simplex Pemphigus sometimes begins in the mouth and should always be considered in the differential diagnosis Bacteriologic study, especially a smear, may be of help

**Treatment.** Mapharsen by injection was formerly utilized Penicillin by injection or one of the tetracyclines are now more often prescribed

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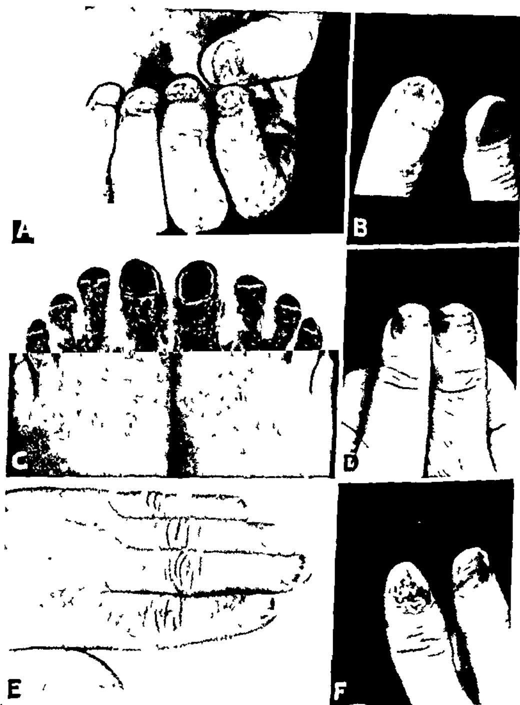



**Plate 85**

***Diseases of the Nails*** A *onychodystrophy* of idiopathic type patient also had alopecia areata B *koilonychia* or spoon nail C *hippocratic nails* with bulbous enlargement of the ends of toes in a patient with congenital heart disease D *onycholysis* or separation of the nails may occur in association with thyroid dysfunction but more commonly is caused by an external irritant such as soap or nail polish E *hemorrhagic striae* occurring spontaneously in a patient with leukemia F *traumatic onychia* with hemorrhagic component













Plate 86

considered Avoidance of trauma and treatment of contributing associated disorders are important

2 **Atrophy.** Poorly developed nails may be a hereditary disorder The acquired type may be secondary to a systemic disorder, to trophic changes or to local factors, *growth is reduced and the nails become thinned and* uneven (Plate 85, A) They usually do not lose their lustre and, in contra-distinction to fungus-invaded nails, are not porous In *onychorrhexis* the nails are thin and dry, longitudinal ridges develop and there is fraying at the distal margin This is common in the elderly (Plate 86, D)

*Treatment* Some help may result from determination and avoidance of etiologic factors, such as external caustics A basal metabolism test should be done Empirically, gelatine and vitamin A may be tried

## Koilonychia

(Gk *koilos*, hollowed + *onyx*, nail)

Koilonychia, or spoon nail, is a dystrophic condition in which a cup-shaped depression develops (Plate 85, B). Once formed, the disorder is usually permanent, although not necessarily so One or more nails may be involved, the thumb nails being particularly susceptible Occasionally there is associated anemia No treatment is effective

## Onycholysis

*(Gk onyx, nail + lysis, a loosening)*

In onycholysis *separation of the nail* from its base occurs without any evident inflammatory reaction (Plate 85, D) The separation may be complete or incomplete, involving only the distal half or less of the nail Only one nail may be involved, but usually two or more nails are affected The cause is various The condition may be associated with thyroid dysfunction or result from trauma, such as too vigorous use of an orange stick, from the use of strong alkaline chemicals such as soap, or from the use of a nail undercoat or polish that penetrates through the nail plate or finds its way *under the free margin*

**Treatment.** The condition of the thyroid gland should be investigated If hypothyroidism is present, thyroid should be prescribed All possible local irritants should be removed The prognosis is excellent for eventual reattachment

## Leukonychia

(Gk *leukos*, white + *onyx*, nail)

In leukonychia *white spots* or *striae* develop in one or more nails (Plate 86, C) Sometimes an entire nail or all the nails are involved Trauma may be a factor The condition is thought to result from air between the epithelial cells or from imperfect keratinization No treatment is effective

## Beau's Lines

Beau's lines *is the name applied to transverse furrows* in the nails, which are usually evidence of a systemic disease particularly a febrile one

The lines appear first in the proximal portion of the nail and gradually move toward the free margin as the nail grows The time of onset of the disease causing the trouble may thus be estimated from the position of the lines

### Hippocratic Nails

In hippocratic nails there is a chronic thickening and enlargement of the nails associated with bulbous enlargement or clubbing of the ends of the fingers or toes (Plate 85 C) The nails also show an exaggeration of the natural curves Other dystrophic changes may be present but these are uncommon and noncharacteristic All of the nails may be affected The changes are usually permanent

Etiology The condition is thought to be of circulatory origin secondary to a disease in the thoracic cage The chest disorder may be chronic pulmonary tuberculosis tumor of the lung or a chronic valvular heart disorder Recognition of hippocratic nails should lead to determination of the etiologic factor No treatment is effective

## Disorders Involving the Hair

There may be excessive or maldistributed hair growth simple lack of hair or paucity of hair accompanied by atrophy The structure of the hair may also be altered as noted in examples to be cited

### Hypertrichosis

(Gk *hyper* exceeding + *thrix* hair)

Hypertrichosis is the development of superfluous hair usually on the face (Plate 87)

Symptoms The condition is peculiar to women If the facial skin is examined carefully *it is* noted that women normally exhibit a downy growth of hair which is desirable to prevent a *shiny skin* If this lanugo hair becomes more pronounced either because of increas[illegible]

[illegible] may be diffuse or consist of a few sparse hairs scattered over the involved skin At times it may approach the distribution and texture of the male beard Superfluous hair may also be present on the areola of the *female breast* A certain amount of hair growth on the legs is normal but at times may be exaggerated the forearms are also not uncommonly involved

Etiology Hypertrichosis may appear as a manifestation of an endocrine dysfunction such as hyperthyroidism or pituitary basophilism or follow therapy with ACTH or cortisone Ovarian hypofunction is occasionally found If there is a normal menstrual history it is a good general rule that the hypertrichosis has no abnormal basis

Treatment In most cases a satisfactory result may be obtained by epilating measures For the arms and legs a depilatory cream may be pre

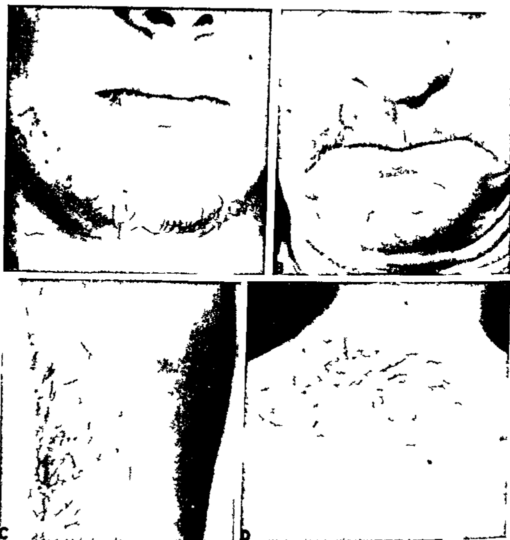



**Plate 87**

*Hypertrichosis* A in a young woman affecting chiefly the chin B the upper lip is mainly involved in a middle aged patient The unwanted hair shown in both A and B was permanently removed by electrolysis C when the arms and legs show a heavy dark growth the use of bleaching agents or the regular application of pumice or depilatories is necessary D growth of hair on the back in a patient with Cushing's syndrome

scribed or shaving advised The use of pumice is sometimes effective For permanent relief of superfluous hair on the face ***epilation by means of electrolysis or high frequency current*** is a standard procedure The hairs must be removed separately and for best results the smallest amount of current capable of completely destroying the follicle should be employed A careful technique should be followed It is a common and regrettable practice for this procedure to be undertaken in beauty parlors and barber shops in which event an underlying endocrine dysfunction goes unrecognized Also the majority of such operators have no knowledge of hygiene and sterilization and the individual thus runs some risk of infection and unnecessary scarring A dermatologist usually performs this work himself or supervises a technician who has been trained by him

Although administration of x rays or radium in sufficient dosage will

result in permanent epilation *such irradiation should not be employed* for this purpose since a dose sufficient to destroy the hair follicle and produce permanent epilation is also sufficient to destroy other parts of the skin. The late result then is radiodermatitis with atrophy, telangiectasia, etc. The insidious feature of the x-ray effects is that they do not develop immediately but only after the lapse of several months or even years.

## Infections of Hair Follicles and Hair

Infections involving the hair follicles and hair have already been discussed in Chapter 9, the Pyodermas, and in Chapter 10, under Superficial Fungus Infections. It should be remembered that in every case of loss of hair or inflammatory conditions of the scalp in children the possibility of fungus infection should be investigated.

### Alopecia Areata

(Gk. *alopekia*, bald patches)

In alopecia areata one or more bald areas develop without warning (*Plate 88*).

Symptoms. The manifestations develop abruptly with the appearance of one or more *coin-sized areas of complete alopecia*, which tend to enlarge. The affected area is completely denuded with the possible exception of some *exclamation point hairs* at the periphery. There is no erythema or any other change in the skin of the affected area. The scalp is the usual site of the disease, but the male beard is not uncommonly involved, in which area the disease may go unnoticed for many months or even years. The eyebrows and other hairy areas of the body may be affected. The process sometimes continues until the areas fuse and eventually the entire scalp may become bald. This is known as *alopecia totalis*. In rare instances all the hair of the body may disappear, leading to a diagnosis of *universal alopecia* (Plate 88 D). The younger the patient the better the prognosis for return of hair.

Etiology. Basic factors at times include emotional an[...] flex

eeth

[...] be searched for, and if present should be eliminated. Eyestrain should be corrected.

2. Psychosomatic factors should be investigated. Frequently some stress factors are present in the family relationship or in business or personal affairs. If a situation of importance is suspected, psychiatric advice should be sought.

3. A mildly stimulating medication such as 1 per cent tincture of iodine should be applied daily to the bald patches.

4. Other local treatment sometimes employed includes the application of hydrocortisone ointment or of alcoholic lotions containing stimulating topical drugs, and irradiation with ultraviolet rays.

5. If the basal metabolic rate is low, thyroid extract may be helpful.




**Plate 88**

*Alopecia Areata.* A, loss of hair in patches, the scalp is otherwise normal. B, more extensive loss but with regeneration, the new hair being lighter in color. C, loss of outer half of eyebrow, the scalp being normal. D, loss of hair over the entire body (*alopecia universalis*).

# Other Alopecias

Loss of hair may occur for various reasons. When there is an accompanying inflammatory condition, an infective agent of some type should be sought. In children the commonest cause is ringworm, which may be detected by the fluorescence test and microscopic examination. Seborrheic dermatitis is often responsible in patients of all ages. Pyogenic infection may

cause loss of hair either through direct inflammatory reaction in the follicle or as in the case of boils through a toxic effect on the adjoining skin In addition alopecia may occur in diseases such as syphilis in which there is a moth eaten noninflammatory defluvium in leprosy affecting particularly the outer third of the eyebrows and in tuberculosis

## Idiopathic (Premature) Alopecia

*Premature*, or *idiopathic, alopecia* refers to the loss of hair often of alarming degree occurring in the young or the middle aged Men are more frequently affected than women The condition is common

*Symptoms* The usual manifestation is a general thinning of the scalp hair over the crown with a gradual recession of the anterior hair line Such recession is usually not uniform but is more pronounced at the sides The process may stop at any point but is frequently progressive leading finally to partial or complete baldness In women the hair loss is often diffuse

Etiology Development of this type of baldness never occurs in eunuchs In addition to the endocrine factor there is often a strong familial tendency A third factor is the coincidental presence of seborrheic dermatitis or pityriasis capitis The history is often obtained of the presence of "dandruff" or of oily scalp neglected for periods of months or years prior to development of the alopecia Nervous factors may be important

Treatment In the alopecias secondary to infection specific therapy for the alopecia is usually not indicated The prognosis is good for complete return of hair unless the infective process has produced atrophy or scarring

In premature alopecia it is usually possible to do a great deal for the patient and at least to delay the inevitable result Good scalp hygiene is very important To this end a shampoo two times a week or oftener is advisable A mildly stimulating and antiseptic scalp lotion should be prescribed (see Seborrheic Dermatitis Chapter 2) The patient should not expose his head to the hot mid day sun Stimulation of the scalp with a high frequency current is sometimes beneficial Deficiencies in the diet should be corrected Adequate rest is advisable Mild sedation may be considered

# Cicatrizing Alopecias

Destruction of tissue with resultant atrophy or cicatrization and permanent alopecia occurs as a sequel in several diseases In lupus erythematosus discussed in Chapter 6 there is usually some evidence of the active disease either on the scalp or on the face or elsewhere Infective processes such as syphilis (gummas tertiary syphiloderms) or deep pyogenic infections or fungus infections such as favus are usually not difficult to recognize There are in addition two disorders in which the sole manifestations are on the scalp and one that is a variant of a common skin disorder




Plate 88

*Alopecia Areata* A loss of hair in patches the scalp is otherwise normal B more extensive loss but with regeneration the new hair being lighter in color C loss of outer half of eyebrow the scalp being normal D loss of hair over the entire body (*alopecia universalis*)

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no time are any inflammatory changes present Epilation occurs and the scalp in the affected area is shiny and the follicle mouths are barely visible

Differential Diagnosis The condition must be distinguished from alopecia areata As a rule the plaques are smaller in alopecia cicatrisata and the presence of atrophy makes the diagnosis certain

Etiology The cause is unknown

Treatment No treatment is effective Prognosis should be reserved although patients rarely go on to complete baldness

## Folliculitis Decalvans

Folliculitis decalvans also produces permanent alopecia but early in the course there is evidence of inflammatory reaction

Symptoms The folliculitis appears to be relatively insignificant but as the disorder develops alopecia occurs and close inspection reveals atrophy of the affected skin The epilated areas vary more in size and are less symmetric than in alopecia cicatrisata

[illegible] s in some [illegible] Testing [illegible] ation are sometimes necessary to rule out fungus infection particularly favus

Etiology The cause is considered to be bacterial streptococci usually being found on culture

Treatment Antibacterial agents are useful in treating the active disease The prognosis for the return of hair is poor

## Lichen Planopilaris

This condition was briefly mentioned in Chapter 8 as a variant of lichen planus The atrophy which is seen in patches over the scalp resulting in alopecia may be unrecognized or confused with one of the two forementioned disorders The coincidental presence of follicular spiny papules usually on the scalp and the presence of the usual form of lichen planus aid the diagnosis

*Treatment* Bismuth by mouth or by injection or one of the antimalarial drugs orally is the usual treatment

# Dystrophic Hair Diseases

*In these disorders* there is no proved *disease* of the scalp apart from the change in the structure of the hair The exact nature of these aberrations is imperfectly *understood*

## Fragilitas Crinium

(L *fragilitas* weakness *crinis* hair)

The scalp hair may become fragile with splitting at the ends or along the shaft (Plate 89 B)

Symptoms The disorder may be mild and limited to the ends of the hair in which event it may be referred to as "frayed hair When the

## Alopecia Cicatrisata

*Also known as pseudopelade,* alopecia cicatrisata results in permanent *loss of hair* There is no evidence of inflammation at any time (Plate 89 A)

Symptoms The condition may begin and remain in one part of the scalp but, more commonly, multiple foci appear and gradually enlarge At



Plate 89

*Scalp and Hair Disorders* A *alopecia cicatrisata* atrophy without antecedent inflammation results in permanent loss of hair B *fragilitas crinium* fragile hair may become frayed break off or be coiled C *monilethrix* the diameter of the hair shaft is ...ed f...act...re of the hair occurring in a narrow site D *trichorrhexis*

no time are any inflammatory changes present Epilation occurs and the scalp in the affected area is shiny and the follicle mouths are barely visible

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Differential Diagnosis The presence of inflammatory changes in some of the follicles distinguishes this condition from alopecia cicatrisata Testing for fluorescence with the Wood light and microscopic examination are sometimes necessary to rule out fungus infection particularly favus

Etiology The cause is considered to be bacterial streptococci usually being found on culture

Treatment. Antibacterial agents are useful in treating the active disease The prognosis for the return of hair is poor

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The scalp hair may become fragile with splitting at the ends or along the shaft (Plate 89 B)

Symptoms The disorder may be mild and limited to the ends of the hair in which event it may be referred to as "frayed hair" When the

symptoms are more pronounced breaking of the shaft may result in noticeable reduction in the length of the hair Sometimes the splitting is longitudinal Coiling of the hair may be an incidental finding

**Differential Diagnosis.** The condition must be differentiated from *monilethrix* and *trichorrhexis nodosa* (infra) and from *trichotillomania* (see Chapter 3). The diagnosis in all cases is verified by microscopic examination

**Etiology.** Dystrophic changes in the hair may occur in systemic diseases such as syphilis and tuberculosis A personal predisposition is probably important The most frequent cause undoubtedly is the ill-advised use of some cosmetic preparation, the more important of these being wave setting lotions, chemicals used in permanent waves, and strong alkaline soaps In a small percentage of patients no obvious cause may be found, in which event the condition is called idiopathic The more careful the investigation of the patient, the smaller the incidence of idiopathic cases

**Treatment.** The treatment varies and depends on the cause If the condition is due to a systemic disease, no specific treatment is necessary In most cases the cosmetic routine should be reviewed and changed In all instances mild soaps or a soap substitute should be used for shampoo

## Monilethrix

(L *monile*, necklace + Gk *thrix*, hair)

The characteristic finding in monilethrix is *beaded hairs* (Plate 59 C)

**Symptoms.** The disorder usually is widespread over the scalp but may be limited to one or more areas There is usually a reduction in the number of scalp hairs and those present are short, owing to fracture in the thin part of the hair between the undulations or beads which are present at regular intervals along the shaft It is thought that *the so-called nodes are actually the normal thickness of the hair* The condition may be recognized on inspection but confirmation by examination of the hair under the microscope is in order Keratosis pilaris and pityriasis capitis may be associated

**Etiology.** There is a marked hereditary factor in most patients The condition almost always develops first in children A psychosomatic factor is sometimes considered important

**Treatment** No therapy is effective

## Pili Annulati

(L *pilus*, hair, *annularis*, ring)

Alternating bands of dark and light hair may be discovered

**Symptoms** The condition is not very conspicuous as the bands are usually narrow The affected hairs may otherwise appear normal Occasionally fractures occur through the light portion, suggesting a structural defect

**Etiology.** Observed usually in children there may be a family history of the disorder

**Treatment.** While a hair tint could be used it is seldom required

## Pili Torti

(L. *pilus*, hair, *tortus*, twisted)

Pili torti or twisted hair, may be confused with monilethrix.

Symptoms. The twisted flattened hairs are fragile and fractures are common. This results in a residual stubble. Keratosis pilaris may be associated.

Etiology. Usually observed in children, there is often a familial tendency.

Treatment. Avoidance of trauma and harsh soaps are advised. The condition may disappear at puberty.

## Trichorrhexis Nodosa

(Gk. *thrix*, hair + *rhexis*, bursting. L. *nodosa*, full of knots)

Trichorrhexis nodosa is a condition characterized by development of nodes and spontaneous fracture of the hairs of the scalp and of the male beard (Plate 89, D).

Symptoms. The condition is usually first manifested by the development of pseudoalopecia. Close inspection reveals frayed hairs, and examination of the hairs will disclose nodes along the shaft. In contradistinction to monilethrix, *the fractures occur through the nodes*, in which the hair is apparently weakened. No associated scalp disease is present.

Etiology. No definite cause has been established. Trauma and infection with certain bacteria have been considered.

Treatment. No therapy is effective.

## Pili Incarnati

(L. *pilus*, hair, *incarnatus*, in flesh)

Ingrowing hairs of the male beard usually result in a pyogenic folliculitis. The disorder is therefore, discussed in *Chapter 9*. There is usually a predisposition to the disorder because the hair is abnormally curved

symptoms are more pronounced, breaking of the shaft may result in noticeable reduction in the length of the hair Sometimes the splitting is longitudinal Coiling of the hair may be an incidental finding

**Differential Diagnosis** The condition must be differentiated from *monilethrix* and *trichorrhexis nodosa* (infra) and from *trichotillomania* (see Chapter 3) The diagnosis in all cases is verified by microscopic examination

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**Etiology** There is a marked hereditary factor in most patients The condition almost always develops first in children A psychosomatic factor is sometimes considered important

**Treatment** No therapy is effective

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*Alternating* bands of dark and light hair may be discovered

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**Etiology.** Observed usually in children there may be a family history of the disorder

**Treatment** While a hair tint could be used it is seldom required

duration varies from several minutes to twelve hours or more followed by peeling of the skin

Differential Diagnosis Similar *manifestations* but usually with less tendency to seasonal involvement and with few or no subjective symptoms may occur with ***lupus erythematosus*** of the subacute type and also with ***sarcoidosis*** In lupus erythematosus the leukocyte *count* will be low and there are other changes in sarcoidosis x rays of the lungs and bones of the hands may reveal other evidence of the disease

Etiology Simple pernio may be considered an ***allergic response to cold*** in a susceptible individual It occurs usually in children and more often in girls The susceptibility may depend on poor nutrition lack of vitamin A and other factors

Treatment 1 Exposure to extreme cold may be prevented by wearing warm stockings and gloves

2 The intake of vitamin A should be increased

3 A bland oil (mineral olive) should be applied to the affected skin after exposure and also prophylactically each night

## Livedo Reticularis

In this disorder there is a mottled dusky red eruption affecting the legs The skin changes are due primarily to contraction of arterioles with compensatory venous dilatation

Symptoms The color changes from light red at first to *subsequent* darker congestive appearance with patterning outlining the venous plexus in the skin Some pigmentation may later develop

Etiology Certain systemic diseases notably tuberculosis predispose toward this disorder Exposure to cold is the inciting force

Treatment 1 The general medical status of the patient should be assessed

2 Warm clothing and avoidance of exposure to cold are advisable

## Raynaud s Disease

The manifestations of Raynaud s disease may be mild or severe The syndrome is caused by a spasm (constriction) of arterioles in the fingers and less frequently the toes or auricles

Symptoms Local *syncope* is evidenced by ***white or dead fingers*** After a variable period this blanched appearance is followed by congestion *and local swelling* (so called *asphyxia*) In severe cases ulcerations develop particularly over the tips of the digits *Gangrene* is a rare and serious complication always resulting in loss of at least part of a digit

Etiology The disease is most common in young women The use of tobacco and exposure to cold seem to be of importance also In addition the symptoms may be observed frequently in association with scleroderma (particularly acrosclerosis) in arteriosclerosis from local injury *i e* use of vibrating tools and as a result of a cervical rib

Treatment 1 use of tobacco should be completely stopped

2 Exposure to cold should be avoided

Chapter 19

# Diseases Due to Physical Agents

NO OTHER organ of the body is so responsive as the skin to environmental factors The common susceptibility of many individuals to chemical stimulation has been considered in Chapter 4, under Contact Dermatitis Consideration of skin disorders caused by physical agents must take into account (1) an obvious overexposure, (2) an idiosyncrasy or allergic response, and (3) individual peculiarities of an anatomical or chemical nature, in which a recognizable disease or syndrome develops.

## Skin Disorders Due to Cold

The obvious response is that due to overexposure to cold, with a resultant frostbite This is manifested by blanching and later by redness and edema, often followed by desquamation In more severe cases, when the frozen state has been maintained for a protracted period, more severe reactions of the skin up to and including gangrene are observed Both ***livedo reticularis*** and ***Raynaud's disease*** (infra) are triggered by exposure to cold, which in these susceptible patients produces constriction of arterioles

Allergic reactions to cold include ***urticaria,*** usually limited to the chilled skin but occasionally occurring on covered portions of the body, and ***erythema pernio,*** now to be discussed

### Erythema Pernio

The manifestations of erythema pernio, or chilblains, are usually confined to the hands and feet and occur only during the winter months Occasionally the nose or ears are affected (Plate 90, A)

**Symptoms.** During cold weather, and particularly after exposure, the patient experiences a burning or throbbing sensation in the involved skin, and these parts exhibit *varying degrees of erythema and edema.* Occasionally hyperhidrosis is noted On palpation the skin is found to be cool rather than warm, as one would expect from the clinical appearance The

matory process in the skin Miliaria is not uncommonly seen in patients who have undergone an operative procedure during which the body heat has been maintained at high levels for a prolonged period Women in labor are particularly susceptible

Differential Diagnosis In infants and children *papulovesicular urticaria* and *eczema* must be differentiated In adults the location the appearance of the eruption and its presence during the summer or after exposure to heat usually aids in differentiating miliaria from *scabies and*




Plate 90

3 Brisk massage helps when cold fingers develop

4 Vasodilating drugs, such as Priscoline and nicotinic acid, sometimes help.

5 Sympathectomy should be considered for the severe manifestations

# Skin Disorders Due to Heat

Skin disorders due to heat may be manifested by local reactions to direct application or by widespread lesions from the effect of heat on the general body economy Burns due to a gross overdose of heat are not considered here

## Erythema Ab Igne

This is a reticulated erythema observed in susceptible individuals after prolonged or repeated exposure to heat (Plate 90, B)

**Symptoms.** The anterior portion of the legs is usually involved, but any part of the body may be affected The rash is macular, rarely papular, erythematous, and reticulated When the patient is no longer exposed to the source of heat the condition fades, leaving pigmentation

**Etiology** The source of heat may be a hot water bottle, an infrared lamp a fireplace, radiator, etc

**Treatment.** The patient should be instructed to avoid close contact with radiant heat

## Miliaria

(L *milium*, millet)

Miliaria, commonly known as *prickly heat*, is caused by blocking of the sweat ducts, resulting in local and sometimes in systemic effects (Plate 90, C)

**Symptoms.** The condition is usually but not invariably seen in hot weather and most frequently affects the covered parts of the body The eruption is typically manifested by areas of *diffuse erythema with vesicles or papules* of small size scattered throughout There is pruritus and a burning sensation After scratching there may be some pustulation (secondary infection) In babies, the rash may be present only in the napkin area In the tropics in addition to the cutaneous eruption, there may be severe symptoms, sometimes leading to collapse as a result of interference with the heat-regulating apparatus caused by the reduction in perspiration This has been termed *tropical anhidrosis* and the *sweat retention syndrome.* The patient complains of exhaustion, dizziness, frontal headache, dyspnea, palpitation, and increased sweating on the forehead and other sites, such as the palms and soles

**Etiology.** The actual cause of miliaria is *plugging of the sweat ducts.* There is good experimental evidence that miliaria is *a manifestation of sebaceous deficiency* of the skin The oil may be removed by too frequent bathing or by excessive perspiration, or perhaps the deficiency results from interference with the normal flow of sebaceous material by the inflam-

## Polymorphic Light Eruption (Actinic Dermatitis)

(Gk *aktis*, a ray)

In contrast to sunburn this disorder is a manifestation of an *allergic* reaction to ultraviolet rays

**Symptoms** There are at least four different types of response to a minimal quantity of ultraviolet rays (1) *Plaque like*, the lesions sometimes becoming lichenified, (2) *Contact dermatitis like* with superficial erythema, edema and sometimes vesicle formation In pronounced cases, depigmentation may result (Plate 90, D) (3) *Edematous pruritic papules*, (4) *Erythema multiforme* type, usually of limited duration

**Etiology.** Blue light and fluorescent light rays as well as ultraviolet rays have been considered capable of causing the disorder Both sexes are vulnerable There may be a low 17 ketosteroid level and a low sperm count

**Differential Diagnosis** Lupus erythematosus, both discoid and systemic may be difficult to differentiate before observation lasting over a few weeks, sometimes laboratory tests are useful It is often best to delay final evaluation In neurodermatitis the skin is almost always favorably influenced by exposure to sun and pruritus is more pronounced The lack of appropriate history of other external factors and the sharp limitation of the eruption tend to rule out contact dermatitis Erythema multiforme lasts longer and does not flare after exposure to the sun

**Treatment** 1 A sun screening lotion or ointment may offer sufficient protection in mild cases (Chapter 25)

2 Orally chloroquine 250 mg twice daily, Atabrine, 100 mg once or twice daily, or a preparation containing two or more anti malarial drugs often affords satisfactory protection for patients with moderate to severe eruptions

3 Lamb advocates hormonal therapy when the response to the above is poor chorionic gonadotropic hormone (Gonadogen), 500 I U daily, in male patients to increase melanin synthesis in the skin testosterone, 50 mg I M once weekly, in older male patients testosterone propionate (Oreton), 25 to 50 I M once weekly, in female patients

## Porphyria

Although porphyria may be classified as a metabolic disease, many of the cutaneous manifestations are initiated by sun exposure

**Symptoms** Porphyria may occur in one of three forms (1) *acute*, in which the symptoms and signs are chiefly in the gastrointestinal and nervous systems and the cutaneous manifestations are chiefly those of pigmentation (2) *congenital*, beginning *early in life* with skin lesions consisting of vesiculobullae on exposed parts of the body, erythrodontia, and red discoloration of the urine (3) *chronic*, which occurs almost always in adults the syndrome including a *bullous* eruption on exposed parts (face and backs of the hands), hyperpigmentation, abdominal colic, and nervous symptoms

*other pruritic dermatoses.* Presence or absence of sweating may be demonstrated by use of the starch iodine test

*Treatment.* 1. O'Brien has shown that after a thin layer of anhydrous lanolin is smeared on the affected skin unplugging of the sweat ducts occurs and a profuse amount of sweat appears on the surface Accordingly, anhydrous lanolin or some other *grease should be applied sparingly once or twice daily* on the affected areas

2 Effort should be made to lower the temperature in the immediate environment of the patient Air conditioning is ideal

3 Physical activity should be curtailed

4 Clothing should be light

5 Frequency of bathing should be reduced and no hot water used A superfatted soap or one approaching neutrality is preferable to the cheaper, more highly alkaline varieties

6 Ultraviolet irradiation (cold quartz) is sometimes helpful

7 If use of lanolin or other grease is not considered desirable, a mild peeling lotion such as 2 per cent salicylic acid in alcohol may be prescribed

## Skin Conditions Due to Ultraviolet Rays

There is marked individual variation in susceptibility to ultraviolet rays, either as natural sunlight or as artificial irradiation In general individuals with fair skin and light hair, and particularly those with blue eyes, react the quickest and exhibit the most pronounced effect Such individuals quickly learn that they can expose themselves to ultraviolet rays for only a limited time The skin defends itself by producing pigment In very fair skins, this may result only in freckling, whereas in those with more abundant chromatophores the tanning process is more general Repeated over exposure for months and years, particularly in individuals with fair skin, may finally result in permanent damage (so called farmer's skin, sailor's skin) In such patients the development of atrophy, telangiectasia, and excessive dryness, and finally the appearance of keratoses is a not uncommon result Exposure to the sun at times may be the precipitating factor in an attack of herpes simplex (see Plate 84, C, and Chapter 13) It is thought that the induced reaction activates the virus and that the rays are not a direct cause In addition to the above mentioned and other effects, ultraviolet rays initiate chemical or metabolic changes which are considered responsible for the production of certain disease syndromes Acute reactions to ultraviolet rays are also blamed for the precipitation of attacks of lupus erythematosus and usually should be avoided by patients who have had the disease or in whom it exists in latent form

Skin eruptions may occur from the local application of certain drugs and chemicals such as tar, oil of bergamot, sulfonamides, or from the internal administration of barbiturates, sulfonamides, quinine and others when the patient coincidentally receives an exposure to ultraviolet rays This is considered under contact dermatitis (Chapter 4) and in drug eruptions (Chapter 5)

fected The sensitivity of such patients is limited to ultraviolet rays of wave length of approximately 3 000 Angstrom units

Differential Diagnosis The disorder *resembles radiodermatitis*, but the appearance early in life and without any history of exposure to roentgen rays serves to distinguish the two

Treatment Damage to the skin is not reversible The patient s skin should be protected at all times against *exposure to ultraviolet rays* and he should wear appropriate sun glasses A sun screen preparation should be applied and reapplied as required to afford protection against reflected as well as direct sunlight (see Formulary) All keratoses and epitheliomas should be removed as soon as they develop

# Reactions to X-Rays and Radium

In contradistinction to the reactions which occur rather commonly as a result of idiosyncrasy to ultraviolet rays most *reactions to x rays and radium are caused by overexposure*, which may be accidental due to care lessness or ignorance or in the case of treatment of malignancies be deliberate Also most of the reactions to ultraviolet rays are temporary and the change is reversible to normal whereas cutaneous effects due to x rays or radium usually lead to permanent change After repeated small fractional doses of x rays the skin may become somewhat dry due to an inhibitory effect on the sebaceous and sweat glands an effect which is often desirable Hyperpigmentation is another common and harmless accompaniment the degree varying with the individual eventually the color fades

## Radiodermatitis

Radiodermatitis is an acute or chronic reaction of the skin following excessive exposure to radioactive elements (Plate 91 B C D)

Symptoms *The acute form is* similar to sunburn the affected skin being reddened and edematous With larger doses vesiculation and formation of bullae are observed When the exposure *is* massive the process may extend deeper into the skin and a slough develop as in a third degree (thermal) burn The manifestations appear only *in the skin directly irradiated* by the radioactive agents and never at a remote site The reactions appear a week or ten days after exposure unless the dose is large in which event the rash develops within two or three days Itching is usually absent but *painful sensations* occur frequently and are directly proportional to the severity of the dermal manifestation *In milder ca*

*resolution is spontaneo*

a similar reaction

*healing may not*

is for destruction of tissue and

chronic ulceration

*In the chronic form* of radiodermatitis the manifestations occur *months or even years after the radiant energy has been delivered to the*

**Etiology.** *Hepatic dysfunction* is common *Chronic alcoholism* appears to be an important factor in the chronic form *Exposure to the sun's rays* often precipitates an attack The presence of abnormal kinds and amounts of *porphyrins, especially uroporphyrin* in the urine and *coproporphyrin* in the feces, is considered of basic importance

**Treatment.** The fluorescence test of the urine may be used to demonstrate the presence of abnormal porphyrins In many instances it is necessary to protect the skin against exposure to ultraviolet rays In the chronic form the ingestion of alcohol should be prohibited

## Hydroa Estivale

Hydroa estivale is a vesicular eruption on the face and backs of the hands, recurrent during the summer months

**Symptoms.** The condition usually begins at age three or four and *spontaneously disappears after puberty The eruption of vesicles and occasionally bullae* appears with the first sun exposure in the spring, and lesions continue to appear in crops *during the summer months.* In the late fall the condition disappears The rash is usually symmetrically distributed In healing, a crust forms, is finally shed, and leaves a small, depressed scar Keratitis is an uncommon complication

**Etiology.** Exposure to ultraviolet rays is thought to precipitate an attack The significance of the presence of abnormal porphyrins in the urine is imperfectly understood

**Differential Diagnosis.** The condition has many features resembling the congenital type of porphyria In the latter disease the skin changes are more severe and there are additional findings such as erythrodontia

**Treatment.** No specific therapy is known The prognosis is good for *eventual spontaneous cure Although it is difficult to gain* cooperation from the young patient to protect his skin from the ultraviolet rays, this should be attempted

## Xeroderma Pigmentosum

Xeroderma pigmentosum is a *fortunately rare disease, in which the* manifestations appear early and are severe (Plate 91, A)

**Symptoms.** The condition almost always begins early in life The first abnormal change is hyperpigmentation of the exposed parts of the body, either diffusely or as freckles The *pigmentation gradually deepens,* and *atrophy appears, the skin being wrinkled, white, and shiny Ectropion* often results from contractures *Photophobia* is an early symptom, and *keratitis with corneal opacities* often develops The skin changes become more pronounced, *dilated capillaries (telangiectasia) form, and keratoses* eventually appear *Malignant changes* are almost certain to develop Most patients die within ten years after acquiring the disease

**Etiology.** The basic vulnerability is inherited, and the two sexes are equally susceptible Usually more than one member of a family is af-

fected The sensitivity of such patients is limited to ultraviolet rays of wavelength of approximately 3000 Angstrom units

**Differential Diagnosis.** The disorder *resembles radiodermatitis*, but the appearance early in life and without any history of exposure to roentgen rays serves to distinguish the two

**Treatment.** Damage to the skin is not reversible The patient's skin should be protected at all times against exposure to ultraviolet rays, and he should wear appropriate sun glasses A sun screen preparation should be applied and reapplied as required to afford protection against reflected as well as direct sunlight (see Formulary) All keratoses and epitheliomas should be removed as soon as they develop

## Reactions to X-Rays and Radium

In contradistinction to the reactions which occur rather commonly as a result of idiosyncrasy to ultraviolet rays, most *reactions to x rays and radium are caused by overexposure*, which may be accidental, due to carelessness or ignorance, or, in the case of treatment of malignancies, be deliberate Also, most of the reactions to ultraviolet rays are temporary and the change is reversible to normal, whereas cutaneous effects due to x-rays or radium usually lead to permanent change After *repeated small fractional doses of x rays* the skin may become somewhat dry, due to an inhibitory effect on the sebaceous and sweat glands, an effect which is often desirable Hyperpigmentation is another common and harmless accompaniment, the degree varying with the individual, eventually the color fades

### Radiodermatitis

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In the *chronic form* of radiodermatitis the manifestations occur *months or even years after the radiant energy has been delivered* to the




Plate 91

*Disorders Due to Physical Agents* *Xeroderma pigmentosum* A degenerative changes finally result in development of multiple epitheliomas *Radiodermatitis* B prolonged and excessive irradiation for treatment of sycosis vulgaris produced these distinctive permanent sequelae nasal prosthesis C permanent loss of nails with degenerative changes in nail beds due to ill advised excessive roentgen therapy for onychomycosis D sclerotic and pigmentary changes are mostly in evidence as late effects of deep and intensive therapy with x rays administered purposefully after mastectomy for carcinoma of the breast

skin The skin in the involved *area becomes dry,* and fragmentation of the elastic fibers in the cutis results in *wrinkling* and *telangiectasia Hyperpigmentation* of the skin and *atrophic white areas* complete the usual picture The retrograde process may continue and if devitalization proceeds sufficiently an *ulcer* will develop Sooner or later *keratoses* appear and these not infrequently degenerate into *epitheliomas,* either of basal cell or prickle cell type

Etiology Radiodermatitis is caused by overexposure to radioactive elements particularly x rays *Idiosyncrasy practically never plays a part in in its production* In some diseases especially malignancies the amount of x rays or radium administered for treatment is calculated to cause a cutaneous reaction This is deliberate and in the judgment of the physician the favorable results to be obtained more than counterbalance the harmful reactions which will surely develop *All too frequently radiodermatitis is caused by carelessness in administering x rays,* either through ignorance of the dangers involved or through faulty technique

Treatment *Prophylaxis is extremely important* No physician should administer x rays or radium unless he is *adequately trained* in the technical details understands the disease he is treating, and is fully aware of the potential dangers Therapy *machines should be carefully calibrated* and recalibrated at regular intervals X ray units designed as diagnostic aids and particularly dental machines are not suitable for therapeutic use The administration of radium or x rays should not be delegated to unskilled technical help *Administration of each dose should be supervised or done personally by the physician* In the use of radioactive compounds *good judgment* is a prime requisite There is no "safe" technique in permanently epilating superfluous hair a dose sufficient to accomplish this will also destroy other parts of the skin The commercial use of x rays (as in fitting shoes) is always a potential hazard

The treatment of acute radiodermatitis is similar to that of contact dermatitis In the chronic form in addition to the bland remedies often prescribed it has been found that *cod liver oil ointment* and a cream containing *aloe vera* are frequently useful Telangiectasia may be dealt with by *electrolysis,* but this must be done carefully and must often be repeated *Keratoses and epitheliomas should be removed* as soon as possible after they develop When chronic ulceration occurs or healing fails to take place in the acute form *resort to plastic surgery* is usu[illegible]

[illegible] publicity in regard [illegible] therapy for skin diseases has alarmed the public Most of this is misleading and unfortunately has been fostered by a segment of the medical profession Theoretical considerations which falsely suggest harm to the patient are without the experienced perspective of dermatologists who have used this modality for 50 years with great success It should be reiterated that the careful judicious use of the roentgen rays and radium

in the treatment of dermatoses should continue In actuality ionizing radiations are required less now than formerly as more specific remedies have been developed However there are still many indications for x rays and radium in the dermatologic field and it is regrettable that any hindrance to their use should be offered by doctors in other fields or by well meaning but misinformed propagandists

*Chapter 20*

# Metabolic Disorders

DERMATOLOGIC EXPRESSIONS of metabolic dysfunction are important both in diagnosing and in adequately understanding the disease processes The changes may be either *specific* or *nonspecific*, and may reflect disease processes in the liver, kidneys, pancreas, parathyroid etc, or have no demonstrable association with other organs The results of dysfunction of a gland of internal secretion and the interrelationships of these glands are well exemplified in *myxedema* In *diabetes*, many nonspecific cutaneous expressions may be observed, including pruritus, pyoderma, moniliasis balanitis, eczematous eruptions (particularly perioríficial), trophic ulcers, and gangrene There is a rare form of xanthoma (xanthoma diabeticorum), classed by Thannhauser among the secondary lipidoses which responds to insulin Necrobiosis lipoidica diabeticorum, a distinctive cutaneous disorder which may be caused by an error in carbohydrate metabolism, will be discussed

Disturbances of fat metabolism are often evidenced in the skin by the presence of localized papules, nodules, and plaques known as *xanthomas*. *The role of the liver is of basic importance.*

The skin may also share in diseases of protein metabolism, infiltrative deposits of *amyloid* being especially notable An aberration in the oxidation of certain amino acids may result in *ochronosis*. In gout, a disease caused by defective purine metabolism, *tophi*, or nodular deposits of urates, are commonly observed near joints or on the external ear

*The chief disturbance* of mineral metabolism is *calcinosis cutis*. Vitamin deficiencies, although much less common now than formerly, and of rare occurrence in the United States in comparison with many countries in other parts of the world, must still be considered as a possible cause for certain skin manifestations Some of these disorders will now be considered in more detail

## Amyloidosis

Deposition of amyloid may be a local skin phenomenon or may occur in many tissues and organs

**Symptoms.** In the localized form, the lesion is *usually located on the leg* (Plate 92, A) and is characterized by a plaque containing numerous closely aggregated brownish, hemispherical papules There may be hyper pigmentation in the involved skin *Pruritus is intense.*

Similar skin lesions may be present in the systematized variety In addition *the tongue may be grossly and unevenly enlarged.* The heart, intestines, and skeletal muscles may all share the infiltration Hemorrhage often occurs in the intestinal tract Back pain is typical The *congo red test* is positive The dye (0 1 per cent in saline) is injected into a suspected lesion, in amyloid tissue it is retained for at least 10 days, whereas in other lesions it is absorbed and invisible within 4 days

**Etiology.** In the localized form, no cause is usually discovered The systemic disease may occur in chronic wasting disorders, particularly in tuberculosis

**Treatment.** No satisfactory measures have been discovered Occa sionally localized pruritus may be relieved by fractional x ray therapy and the judicious use of antihistamine drugs

## Calcinosis Cutis

Deposition of calcium in the skin may be of local import or have sys temic significance (Plate 92, B)

**Symptoms.** The mineral is deposited in the cutis, and nodules or plaques develop The lesions may be solitary or multiple Most of them occur over points of pressure, particularly on the upper extremity The material seems to act as a foreign body and ulceration eventually occurs, *with its extrusion A roentgenogram may assist in the diagnosis*

**Etiology** Hyperparathyroidism may sometimes be demonstrated Scleroderma may be associated

**Treatment** It is sometimes possible to remove the mineral by curet tage, using procaine anesthesia The diet should be low in calcium

## *Myxedema*

Skin changes may occur secondary to alterations in normal thyroid function

**Symptoms** In the diffuse type of myxedema, the skin is dry and scaly Non pitting edema is widespread, accounting for the swollen nose, lips and eyelids, and the expressionless face The scalp hair is sparse and the nails are dystrophic There may be local increase in fat General symp toms of mental and physical sluggishness are present The basal metabolic rate is low

In the *localized* form there is an asymptomatic, well demarcated, plaquey, edematous eruption usually present in the pretibial region This occurs in patients with *hyperthyroidism,* often following an operation for partial removal of the thyroid gland Exophthalmos may also develop

**Etiology.** The diffuse type of myxedema is due to diminished thyroid function The local form is thought to be caused by *an excess of the thy*

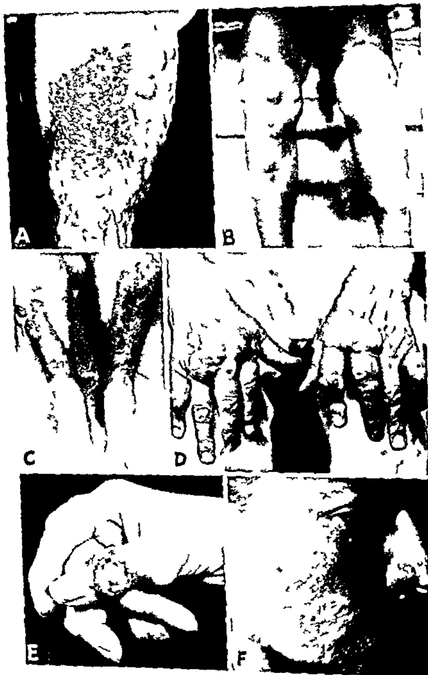



Plate 92

*Metabol c D sorder* A
pruritus may be intense
and plaques C necrob
typ cal *Gout* D multipl

*roid-stimulating hormone of the anterior lobe of the pituitary gland* The skin changes in both forms are due to increased deposits of *mucin*

Treatment. 1 Thyroid extract is the classic treatment in the diffuse form

2 *No specific remedy* is available for the localized variety Injections of hyaluronidase or of hydrocortisone into the lesions may be tried

## Xanthomatosis

*This term refers to a wide variety of clinical disorders in which there* is a fundamental error in lipid metabolism The skin is a prominent location for many of the infiltrations and tumors that develop The classification of Thannhauser is based on chemical studies In many instances, a clinical differentiation is impossible and laboratory estimation of total lipids and the results of fractionation into cholesterol, phospholipids and neutral fats are requisite for an accurate diagnosis In the arrangement of lipoidoses by Thannhauser there are 5 main groups

1 Hypercholesteremic
2 Hyperlipemic
3 Normocholesteremic
4 Extracellular lipid accumulations
5 Disturbances of phospholipid metabolism

## Hypercholesteremic Xanthomatoses

The majority of patients with evidence of abnormal cholesterol metabolism inherit this tendency The exact mechanism is unknown but the *trait is usually classified as incomplete dominant In rare instances,* lesions have developed secondarily to cirrhosis and to hypothyroidism

*Symptoms The eyelids are the most commonly affected,* either alone or in association with other sites, this is known as ***xanthelasma.*** The lesions develop as yellow (chamois like), velvety, often symmetrically distributed papules and coalesce, forming plaques (Plate 93, A)

In ***xanthoma tuberosum,*** the lesions are yellow or yellowish-red papules and nodules and are observed over the joints, on the extensor surfaces (Plate 93, C, D, E), scattered irregularly over the trunk, and on the palms and soles The tendon sheaths may be involved The lesions occasionally coalesce to form large tumefactions The disorder is sometimes seen at points of pressure or at trauma sites

Well over 50 per cent of these patients develop ***coronary artery disease*** due to xanthomatous infiltration of the coronary arteries *Peripheral* vascular disease may also occur

**Chemistry.** *The serum is clear Serum lipids are elevated* in 50 per cent, with often marked increase in cholesterol and cholesterol esters The *neutral fats and* phospholipid fractions are usually normal

**Pathology.** Two characteristic cells are present in the infiltrate the ***foam cell*** and the ***Touton giant cell.***

**Differential Diagnosis** Other forms of xanthomatous disease are differentiated by clinical features in the skin, by the findings on general

medical examination and by careful laboratory investigation Occasionally there is some resemblance to ***urticaria pigmentosa***, but in this disorder the lesions become elevated only after rubbing

Treatment 1 The probability of cardiovascular involvement and the hereditary nature of the disease should be kept in mind

2 Institution of a *low fat diet, particularly with restriction of animal*

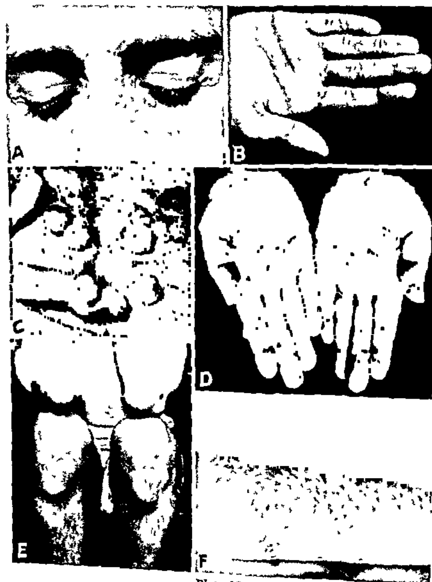



Plate 93

Xanthon... [illegible]

*roid-stimulating hormone of the anterior lobe of the pituitary gland.* The skin changes in both forms are due to increased deposits of *mucin.*

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**Differential Diagnosis** Other forms of xanthomatous disease are differentiated by clinical features *in the skin, by the findings on general*


















Plate 94

[illegible]

*fats* is of basic importance Occasionally this results in reduction in the size of the lesions The blood cholesterol level usually falls after a few weeks

3 In xanthelasma the usual local treatment is application of trichlor acetic acid This must be done carefully the applicator being almost dry before it touches the affected skin The procedure may have to be repeated several times

4 Choline and other lypotropic substances have been advocated but the results are disappointing

5 Large tumors which interfere with function or are disfiguring may sometimes be surgically excised

## Hyperlipemic Xanthomatosis

In this syndrome the visible lesions are secondary to an increase in neutral fat in the serum (Plate 93 F)

Symptoms The lesions are usually numerous small papules and are classified as *eruptive* The disorder may occur in children as a familial disorder (Burger Grutz disease) with associated hepatosplenomegaly or as a consequence of neglected diabetes mellitus (*xanthoma diabeticorum*) In the latter the lesions tend to involve the flexor surfaces of the extremities but may be widespread

*Chemistry* The serum is cloudy The neutral fats are markedly increased Cholesterol and phospholipids may also be elevated

*Treatment* Low fat diet is helpful in the familial disorder Appropriate therapy for an underlying diabetes will often result in disappearance of the eruption

## Normocholesteremic Xanthomatosis

In this group of rather uncommon disorders xanthomatous lesions may appear in the skin alone or in connection with involvement of other organs or tissues lipid studies of the serum show normal findings (Plate 93 B)

Symptoms In the *disseminated* form lesions are chiefly present on the flexural surfaces of the extremities and are observed also in the axillae and sometimes on the face and mucous membranes The coronary arteries are not affected

*Hand Schuller Christian Disease* is a childhood disease in which cutaneous xanthomas occur in less than half the patients in association with rarefaction of the bones of the skull diabetes insipidus exophthalmos gingivitis stomatitis and abnormalities in growth The course is progressive and no treatment is effective

*Letterer Siwe Disease* is a disorder of the reticulo endothelial system in infancy with pronounced and progressive hepatosplenomegaly bone lesions and purpuric eruptions This disorder is rapidly progressive and fatal

At times xanthoma cells will infiltrate into areas of inflammation or become associated with other cells to form tumors

Nevoxanthoendothelioma During the first few weeks of life a solitary lesion or a group or groups of yellowish brown nodules occasionally um

ness that these food elements are essential for the maintenance of a state of health May it again be stressed that accurate information in regard to the diet, particularly as related to vitamins, is an integral part of the dermatologic history In this way potential as well as actual evidence of inadequate vitamin intake may be evaluated

The skin manifestations of vitamin deficiencies and excesses may be summarized as follows

## Vitamin A

Night blindness due to lack of visual purple synthesized from the vitamin is often noted first This forms the basis for the *adaptation test* to demonstrate deficiency of vitamin A Bitot spots may be seen on the cornea In cases of severe lack of vitamin A, *phrynoderma*, a follicular, papular eruption, often generalized and accompanied by pruritus, may develop Hyperpigmentation and diffuse scaling may accompany the rash Alopecia, brittleness of the nails, and loss of luster of scalp hair are also observed In milder cases, the skin may be dry and the sweat and oil glands less active Lack of vitamin A has been thought to predispose the skin to development of acne vulgaris Keratosis follicularis (Darier's disease) is considered by Peck to be due to a congenital aberration in the utilization of vitamin A or in conversion of carotene by the liver It has been customary perhaps with little basis, to consider vitamin A deficiency as a factor in many forms of hyperkeratinization In such cases, administration of vitamin A usually yields poor to negative results

Excessive vitamin A intake has been shown to result in storage of cholesterol in various organs The liver and spleen may become enlarged, loss of weight may occur, with the patient feeling below par The disorder, *carotenemia*, results from the excessive ingestion of the yellow vegetables or of oranges, with resultant storage of provitamin A (*carotene*), which the liver is unable to utilize The disorder is usually harmless, but it may be confused with icterus and occasionally is associated with diabetes The yellowing of the skin is first seen in the palms and soles, later in the axillae, and sometimes it is more generalized The scleras are unaffected The blood serum may show a yellow discoloration similar to that of the skin

## Vitamin B Complex

Although there are many components of the vitamin B complex, only three are of particular interest at this time It should be mentioned, however, that there is evidence that the various fractions may be interdependent

Thiamine (Vitamin $B_1$). Symmetric polyneuritis, gastrointestinal symptoms, and precordial pain are prominent symptoms of beriberi, which is caused by thiamine deficiency Sometimes a burning sensation of the soles is an early sign

Riboflavin (Vitamin $B_2$). Lack of riboflavin may occasionally cause perleche and cheilitis, as well as scaling over the nose and other parts of the face *Perlèche is more commonly a manifestation of monilia infection.*

bilicated, develop on the face, trunk or extremities No treatment is required as the lesions spontaneously resolve, usually within a year

## Extracellular Lipid Accumulations

There are three distinct disorders

**Necrobiosis Lipoidica Diabeticorum** Localized degenerative, plaque like lesions of distinctive appearance occur almost always over the shins (Plate 92, C) The lesions may be solitary or multiple, are sharply demarcated, and are reddish with yellowish centers which are atrophic and shiny Telangiectasia may be present over the surface Diabetes mellitus is found in over 50 per cent of the patients Thickening of the walls of the blood vessels is followed by necrosis and fatty infiltration No treatment is effective

**Lipoid Proteinosis** Sclerotic and yellowish nodules on the face (particularly the eyelids), the extremities, in the mouth (including the tongue), the larynx and pharynx, develop early in life There is usually a familial tendency to diabetes Blood lipid studies may show a relative increase in lecithin Parental consanguinity is mentioned as a possible factor

**Extracellular Cholesterosis.** Single lesions or groups of reddish brown papules enlarge to form plaques gradually spreading to multiple areas of the trunk and extremities Cure is spontaneous after several months

## Disturbances of Phospholipid Metabolism

There are two rare familial disorders

**Niemann Pick Disease** Most patients are Jewish infants Hepatosplenomegaly emaciation mental retardation yellowish skin color and anemia are the chief findings Biopsy reveals a distinctive histiocyte containing lipid The blood serum shows increased lecithin and often above normal averages of cholesterol and neutral fat as well The disease is fatal

**Gaucher's Disease** This disorder occurs in infants and is characterized by hepatosplenomegaly by neurologic signs and by progressive physical and mental deterioration The skin is often bronze colored The typical cells are usually demonstrated by bone marrow aspiration The blood lipids are normal The course is rapidly fatal An adult form is described which is more chronic

# Vitamin Deficiences and Excesses

Conspicuous improvement in nutritional practice, particularly reflected in the conservation of vitamins has been achieved through modern canning techniques intelligent home cooking processes (rapid preparation of food by pressure cooking utilization of water used in cooking vegetables etc ), and the availability of fresh fruits fruit juices and vegetables (sometimes frozen) during the entire year In addition vitamins are now commonly taken regularly, to supplement the usual diet For these and other reasons, skin lesions resulting from deficiency of vitamin intake are not commonly observed in New York City This may result in a loss of aware

ness that these food elements are essential for the maintenance of a state of health. May it again be stressed that accurate information in regard to the diet particularly as related to vitamins is an integral part of the dermatologic history. In this way potential as well as actual evidence of inadequate vitamin intake may be evaluated.

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The other mentioned dermatologic symptoms of *ariboflavinosis are more* frequently due to other factors, such as contact sensitivity or seborrheic dermatitis

**Nicotinic Acid.** It is agreed that *pellagra* is basically caused by lack of nicotinic acid, although some of the neurologic signs may be due to coincidental thiamine deficiency In addition to symptoms referable to the central nervous and gastrointestinal systems, the dermatologic manifestations are often typical and a diagnosis is frequently possible on the basis of these alone At first the eruption occurs on the dorsa of the hands the wrists, and the face, as a diffuse erythema Another location occasionally involved is a narrow band around the neck (so called collar of Casal) Other areas on the covered parts of the body may also become involved The affected skin soon becomes scaly, and other eczematous changes develop The condition may clear but recur later Changes in pigmentation (either increase or decrease) may occur, and atrophy is often a sequel. Oral lesions are not uncommon

*Etiology* Pellagra is most common in those whose diet includes corn and little or no wheat Exposure to the sun may predispose to the condition Women are more vulnerable than men Alcoholism is an important factor, probably because of the coincidental deficiency in diet

## Vitamin C

Lack of vitamin C results in spontaneous petechiae or in purpura The capillary fragility test is positive Avitaminosis C is often overlooked as a factor in the production of hypertrophic gingivae that bleed readily

## Vitamin D

No dermatologic manifestations have been demonstrated from lack of this vitamin If vitamin D is administered in excessive amounts hypercalcemia with tendency to decalcification of bones may be induced

## Vitamin K

A lack of vitamin K may decrease the concentration of prothrombin in the blood with resultant purpura

## Treatment of Vitamin Deficiencies

1 The vitamin involved should be given in adequate dosage (see Table 5)

**Table 5 Dosage of Vitamins**

| *Vitamin* | *For Maintenance* (adult) | *In a Deficiency* |
|---|---|---|
| A | 4 000 U/day | 25 000 U day |
| $B_1$ (thiamine) | 1 mg /day | 50 mg day |
| $B_2$ (riboflavin) | 2 mg /day | 5 mg day |
| Nicotinic acid | 10 mg /day | 100 + mg day |
| C | 30 mg /day | 150 mg /day |
| D | 400 U day | 1 000 U/day |
| K | — | 5 mg |
| E | 1 mg /Kg (rabbit) | 200 mg |

Table 6 Sources Rich in Vitamins

| *Vitamin* | *Source (natural or fortified)* |
|---|---|
| A | Butter yellow vegetables eggs |
| B | Whole grain cereals yeast pork liver peanuts |
| $B_2$ | Liver wheat germ yeast |
| B | Liver yeast |
| C | Citrus fruits |
| D | Fortified milk fish oils |
| K | Leafy vegetables |
| E | Nuts soybeans rice |

2 It is often well to administer related vitamins such as another member of the vitamin B complex

3 The dietary error should be corrected to provide the full maintenance requirement of vitamins (see Table 6) as well as a balanced diet for protein minerals total caloric values etc If necessary, supplementary vitamins should be provided

Excessive amounts of vitamins A and D should be avoided

# The Skin and Other Organs

As ALREADY noted, the skin as an organ is vulnerable to a wide variety of disorders Many of these skin diseases are entirely independent of the rest of the body, but disorders resulting from ***interrelationships with other organs are not uncommon.*** The skin and other regions of the body are sometimes coincidentally involved with the same disease process In other instances, although the cutaneous manifestations are not actually part of the disease, so far as structure is concerned, they nevertheless may signal the presence of disease in another region of the body The latter lesions *should be considered nonspecific and of an allergic or toxic nature,* caused by the indirect effects of the disease on the skin In leukemia, for example, the skin may exhibit specific infiltrative plaques with a typical and diagnostic histologic architecture Patients with leukemia may also exhibit a nonspecific papulovesicular or purpuric eruption Some of the material in this chapter is repetitious, but it is presented again here because of the importance of not overlooking the skin manifestations of internal disease The subject is considered under two headings as follows

1 Disorders often involving the skin and one or more other organs
2 Skin manifestations suggesting the possibility of an underlying (causative) disorder

The following discussion briefly outlines some of the more important clinical aspects This should indicate that careful study and interpretation of skin lesions may be not only rewarding but also imperative for the correct evaluation of many patients Additional information will be found under the appropriate heading in other sections of the book

## 1. Disorders Often Involving the Skin and One or More Other Organs

### Adenoma Sebaceum

This is a nevoid disease in which the sebaceous glands are affected The disorder is manifested by firm red-yellow papules in the middle third

of the face The lesions appear early in life As a part of the syndrome known as *epiloia*, subungual and periungual *fibromas* of the fingers and toes may be noted *Tuberous sclerosis*, resulting in mental deficiency and epilepsy is not uncommon

## Amyloidosis

A common manifestation of the *systematized form* is a *painful macroglossia* Occasionally purpuric areas or discrete firm papules may be present on the face or elsewhere

## Dermatomyositis

As the name implies the skin and skeletal muscles are usually both involved *Edema of the eyelids* and *erythematous plaques are the usual* skin manifestations with scleroderma poikiloderma erythema multiforme and erythema nodosum often simulated *The muscles of the shoulder girdle* bilaterally are commonly but not exclusively affected The weakened muscles are tender and have a doughy consistency An underlying malignancy is not uncommon

## Leukemia

Specific infiltrations id like and other secondary manifestations and pyogenic complications may develop In cases of widespread erythroderma the disease may be suspected for months or even years before confirmation is possible Occasionally the correct diagnosis is first suspected because of a few significant skin lesions Leukemia may supervene as a fatal complication of mycosis fungoides

## Lupus Erythematosus

At this time there is no unanimity as to the exact relationship of the discoid and of the *systemic form* The consensus seems to be that they are variants of one disease Nevertheless *the transition* from one form to the other is uncommon and it is useful to consider them as different problems In the systemic disease young women predominate and the eruption is usually erythematous transitory and relapsing Loss of weight joint pains weakness pleuritis and mild fever are frequent Involvement of the kidneys spells a poor prognosis Leukopenia *reversal of the* A G ratio albumin and red blood cells in the urine high sedimentation rate and demonstration of the L E cell in the *peripheral blood* are the chief laboratory findings of the disease In the *frequent cases* of conflicting clinical features laboratory information may be quite helpful One should also be certain that the report of finding the L.E *cell is* authentic as its recognition requires expert knowledge

## Malignancies

Prompt ...
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... subject to trauma are two impor

# The Skin and Other Organs

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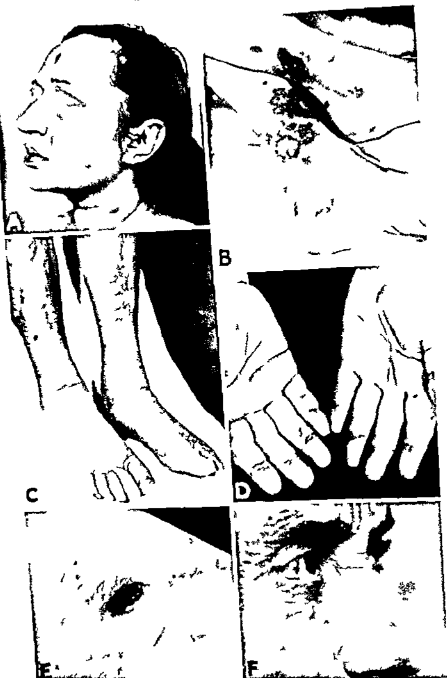



Plate 95

*The Skin as a Mirror.* A, *nevus araneus* with jaundice in patient with cirrhosis. B, ulcerative *nodular vasculitis*. C, localized *myxedema*. D, *periarteritis nodosa* with painful nodules and tendency to ulcerate. E, *myelogenous leukemia*: a necrotic nodule and miliary papules (leukemid). F, *ochronosis* with lesion of sclera.

tant considerations Failure to act appropriately invites disaster since prickle cell epithelioma is prone to early metastasis, and once junction nevus has changed into a melanoma, the prognosis is poor With both types, spread may occur to the regional lymph nodes but cells soon enter the general circulation, and tumors then develop in multiple sites throughout the body Rarely, the skin becomes secondarily invaded by tumor cells from an internal malignancy

## Mycosis Fungoides

While the lesions in this disease tend to localize in the skin for many years, involvement of the gastrointestinal tract, liver and other organs may occur The terminal stages may reveal a leukemic tumor and the typical blood picture

## Mycotic Infections

Of the so called superficial fungus infections *moniliasis* has potentialities, internally The causative fungus, ***Candida albicans,*** is a regular inhabitant of the adult gastrointestinal tract In the elderly, particularly, when prolonged courses of a tetracycline drug are administered, the lungs and other viscera may share the infection The lungs are the primary site of the disease in ***histoplasmosis, coccidioidomycosis*** and ***blastomycosis,*** and in all the deep fungus infections, the skin and many other organs show the potentiality for being secondarily infected

## Neurofibromatosis

The skin manifestations include pigmentation and fibrotic tumors which arise from peripheral nerve sheaths Internally, tumors may affect any organ or arise from the cranial nerves Deafness may occur from involvement of the eighth cranial nerve Intracranial tumors are unusual Sarcomatous degeneration is infrequent

## *Periarteritis Nodosa*

Localized painful nodules in the skin often pulsating and surrounded by a capillary network occur in 25 per cent of cases Lesions may appear in the walls of the small arteries in any part of the body Fever, weakness and pain are common (Plate 95 D)

## Pyogenic Infections

The kidneys are not uncommonly involved in patients with superficial pyogenic infections such as impetigo The administration of corticosteroids appears to favor the dissemination of pyogenic infections, sometimes with tragic results

## Sarcoidosis

The skin may be the only site or share the disease with the lungs bones, parotid gland and uveal tract as well as the liver and spleen Papules

## 2. Skin Manifestations Suggesting the Possibility of an Underlying (Causative) Disorder

### Acanthosis Nigricans

Hyperpigmentation with papillomatous surface changes present in the axillae and groin and often spreading to flat areas of the skin in the middle aged, should suggest *acanthosis nigricans* In at least 50 per cent, examination will reveal an internal malignancy, usually abdominal

### Acne

The overwhelming majority of patients are young and healthy Acne appearing for the first time in adult life might be due to a drug (halogen, androgen or corticosteroid) or, rarely, to a disorder of the ovary, testis, or the pituitary or adrenal glands

### Cyanosis

Apart from the instances in which there is an embarrassed circulation or an obvious respiratory disorder, congestion of the skin may be a valuable sign The congestive dark red appearance of the skin so characteristic of *polycythemia* is usually observed on the nose and other parts of the face, sometimes leading to confusion with rosacea Both diseases may be coincidentally present

### Eczema in the Elderly

Eczematous changes usually representing overtreatment of pruritus may indicate rarely the presence of a hidden neoplasm

### Erythema Multiforme

In many instances the cause of erythema multiforme will remain obscure In all cases in which there is an atypical distribution or prolonged course some internal toxic or infective process should be suspected When the lesions are arciform and appear in successive showers, the possibility of *rheumatic fever* should be considered

### Erythema Nodosum

Erythema nodosum may appear as an allergic manifestation after ingestion of *drugs* When it is observed in relation to an upper respiratory infection the possibility of *coccidioidomycosis must not* be forgotten Erythema nodosum may also be a manifestation of *tuberculosis*, although this is rare in the United States

### Factitial Eruptions

These may be divided into three types (1) *neurotic excorciations*, a nervous habit which may indicate that the patient is undergoing a period of uncertainty or of confusion, (2) *dermatitis factitia*, damage to the skin is usually deliberate and designed to deceive There may be an underlying

or nodules are usually limited in number and lymphadenopathy is common *Histologic confirmation is always required*

## Scleroderma

In the *circumscribed* forms, the disease is only of minor local importance In *acrosclerosis* and in *progressive scleroderma*, the skin manifestations are often severe and systemic involvement is the rule Esophageal stricture, fibrosis of the lungs and constrictions in the intestinal tract are common as the disease progresses The heart and kidneys may become affected

## Syphilis

The first manifestations are always in the skin or available mucous membranes The chief danger is the now common lack of experience with the disease and the possible failure of the *unwary physician to recognize the early lesions* Untreated syphilis may remain dormant and symptomless for months and years, at which time a vital organ or tissue may be invaded with irreparable harm

## Tuberculosis

Most of the skin manifestations are secondary to an internal focus (almost invariably the lungs) Modern therapy and improved hygiene share credit for the present low incidence in all forms of the disease

## Urticaria Pigmentosa

When the disease has been verified histologically, one should keep in mind that mast cell tumors may be present in the bones liver and other viscera

## *Vitamin Deficiencies*

In this land of plenty problem eaters food faddists alcoholics and the ignorant may conspire to provide instances of low vitamin intake sufficient to be detected clinically A follicular keratosis pilaris like eruption excessive dryness of the skin and night blindness may point to a lack of vitamin A Pellagrous light-sensitive dermatitis of the face and backs of the hands with central nervous system and gastrointestinal system involvement spell out the need for a nutritious diet and particularly for nicotinic acid Hypertrophic gingivae and purpuric skin lesions may reveal a lack of intake of vitamin C (citrus fruits)

## Xanthomatosis

In a careful evaluation of the patient presenting xanthomatous infiltrations in the skin laboratory determination of total lipids and of the fractions will help classify the disorder Xanthomatous infiltration of coronary arteries, the presence of diabetes or liver disease and the instances of diffuse involvement of the reticulo endothelial system are of general medical interest

## 2 Skin Manifestations Suggesting the Possibility of an Underlying (Causative) Disorder

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psychosis, (3) *delusions of parasitosis*, the patient believes he is suffering from an infection or an infestation In both latter disorders, psychiatric consultation is desirable

## Generalized Exfoliative Dermatitis

It is important to determine the cause This is usually secondary to psoriasis or to some other dermatosis A drug may be responsible It should be always remembered that a form of lymphoblastoma is sometimes the basic disease

## Herpes Simplex

*Activation of the virus with subsequent development of herpes is common in many febrile states, particularly pneumonia*

## Herpes Zoster

This disorder has been observed *as a complication* of leukemia of Hodgkin's disease, and other types of lymphoblastoma

## Hippocratic Nails

The curved nails and bulbous finger tips refer to a thoracic malady such as pulmonary tuberculosis or tumor, or a heart disorder

## *Hyperhidrosis*

Excessive perspiration may be generalized or localized *The localized form is frequently psychosomatic and usually has no physical basis* (Plate 96, D) Investigation of the *generalized type* may uncover a latent or *silent hyperthyroidism One should not forget that some other systemic* disease, such as tuberculosis, may be the cause Drugs such as the antihistamines may be responsible

In treatment, numerous internal remedies have been utilized including Banthine, Probanthine, the tranquilizing drugs, antihistamines and sedatives *Some temporary help may be obtained from local astringents* when limited areas of skin are involved Aqueous solutions of tannic acid (5 per cent) or of formaldehyde (1 per cent) or of the aluminum salts are useful for excessive perspiration of the hands, feet or axillae

## Hyperpigmentation

*Much valuable information may often* be obtained from a careful consideration of pigmentary manifestations The discoloration of *jaundice* may be less apparent in dark skinned patients and be discerned only on careful examination of the sclera Yellowish discoloration of the skin in *carotenemia* due to excessive intake of yellow vegetables may be generalized but is best observed on the palms and may be seen only in the creases The pigmentation in *Addison's disease* (Plate 96, A) varies from light to a coppery brown, depending on the complexion *It is more pronounced* on the exposed parts of the body, such as the face or backs of the hands, and in areas subject to pressure and the areas normally darker, such as

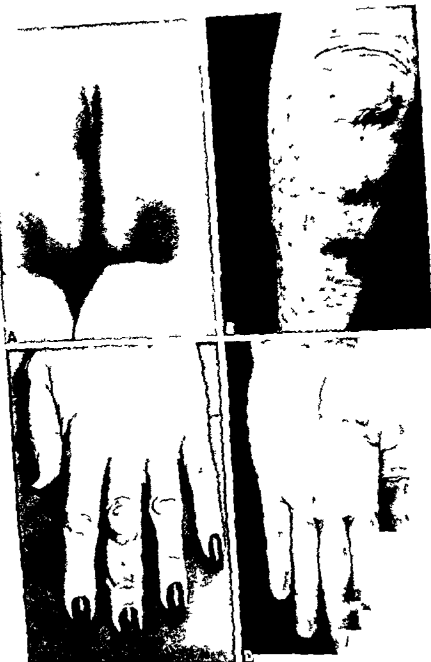



Plate 96

*The Skin as a Mirror Addison's disease* A, *showing* hyperpigmentation in localized areas *Juxta-articular nodules* B discrete subcutaneous lesions not uncommonly observed in rheumatoid arthritis other causes include *syphilis* C confluent irregular plaquey variety *Localized hyperhidrosis* D an annoying psychosomatic disorder

the axillae and the anogenital region The mucous membranes may also be pigmented *A dark brown to black pigmentation localized to the axillae and genital region should suggest* ***acanthosis nigricans.***

## Hypertrichosis

Unwanted hair on the face in women is not uncommon but has no special medical significance apart from its unsightliness and consequent effect on the psyche Hypertrichosis is observed as evidence of overdosage or idiosyncrasy during *administration of ACTH It is also a sign in* ***Cushing's syndrome,*** which will be manifested by other symptoms of weakness, hypertension adiposity, etc (see Plate 87, D)

## Juxta-Articular Nodes

Juxta-articular nodes are fibrous, subcutaneous lesions often seen in chronic disease (Plate 96, B, C)

**Symptoms.** The lesions are firm, sometimes tender, subcutaneous nodules, characteristically developing near joints The number varies from one to ten or more The overlying skin is usually not adherent and is normal

**Etiology.** Most patients have rheumatoid arthritis, but occasionally syphilis or other chronic diseases will be causative

**Treatment.** The underlying disease should receive appropriate therapy

## Maculoerythematous Eruptions

The sides of the trunk may be the site of a transitory, erythematous and macular eruption of which the protype is the ***syphilitic roscola.*** Such a rash may be caused by ***drugs.*** It might also represent modified ***measles*** or ***scarlet fever*** in a partially immune subject Brucellosis, ***infectious mononucleosis,*** and ***systemic lupus erythematosus*** are also possibilities Appropriate studies, including laboratory determinations, will usually determine the cause It should be emphasized that one should not pass over lightly such an important clinical sign

## Mouth Lesions

Mouth lesions frequently accompany many dermatoses Careful examination of the accessible mucous membranes should always be part of the cutaneous examination ***Burning tongue,*** while distressing seldom is meaningful otherwise The tongue may reveal smooth atrophy, which should lead one to consider ***pernicious anemia and syphilis.*** A diagnosis of ***amyloid disease*** *may be strongly suspected from the presence of a painful macroglossia* Spongy, receding and bleeding gingivae frequently denote a ***deficiency of vitamin C.*** Hypertrophic gingivae are not uncommon in ***leukemia and other blood dyscrasias*** Hyperpigmentation near the margin of the teeth may denote ***intoxication due to a heavy metal*** Oral manifestations of ***syphilis*** may be noted in all stages of the disease The chancre is most frequently seen in the tonsillar area, an injected pharynx is always present in the early secondary stage, late ulcerative or destructive lesions in late syphilis are observed infrequently but should not be overlooked ***Tubercu-***

lous ulcers in the mouth or throat indicate pulmonary involvement Eroded painful oral lesions may be the first evidence of ***pemphigus***

## Neurodermatitis

While the tendency to this disease seems to be inherited other causes including emotional stress and strain are important Occasionally an *endo crine factor* is suggested because of a periodic flare premenstrually or be cause the disorder appears at the time of *the menopause*

## Pallor

When suspected pallor may be further demonstrated by everting the lower lid and examining the mucosa A mistake is not apt to be made ex cept in suspecting anemia when it is not present Nevertheless the hemo globin and red blood count should always be checked when anemia is surmised

## Pruritus

Itching is a common symptom of many dermatoses The presence or absence of pruritus may be an important diagnostic indication For instance with a florid eruption in which itching is absent ***syphilis*** should be strongly suspected Lack of pruritus is also characteristic of ***parapsoriasis*** Most eczematous eruptions itch as do many other dermatoses such as *lichen* planus dermatitis herpetiformis etc In all such cases the itching can be explained on the basis of the apparent dermatosis It *is a different* matter when a patient presents no eruption but complains often bitterly of severe pruritus which may be localized or generalized It is important to remem ber that pruritus may be an *early symptom* of such diseases as nephritis cholecystitis diabetes leukemia and particularly *of carcinoma It* may occur in pregnancy It is therefore important ***in all instances of unexplained pruritus to investigate carefully*** the various systems in order to make cer tain that a major error of omission is not made This applies particularly to generalized or extensive *pruritus* In local pruritus such as pruritus ani a somatic causative factor is not often discovered

## Purpura

Hemorrhage in the skin usually *at multiple* small points results in pigmentation which does not disappear under pressure and which may have serious significance (Plate 97) In many instances careful search and investigation fail to disclose a *cause* This so called ***simple or idiopathic purpura*** may persist for years as a sporadic phenomenon One should never be completely satisfied with a diagnosis of simple purpura and every effort should be made to discover a cause Perhaps the most common discernible factor is ***intolerance to drugs***, the barbiturates being particularly important ***Thrombocytopenic purpura*** *should* always be considered in the differential diagnosis and of course conditions like ***leukemia***, ***pernicious anemia and poisons*** *should* receive consideration as etiologic agents In patients with these latter disorders lesions on the hard palate are not un

the axillae and the anogenital region The mucous membranes may also be pigmented A dark brown to black pigmentation localized to the axillae and genital region should suggest *acanthosis nigricans.*

## Hypertrichosis

Unwanted hair on the face in women is not uncommon but has no special medical significance apart from its unsightliness and consequent effect on the psyche Hypertrichosis is observed as evidence of overdosage or idiosyncrasy during administration of ACTH It is also a sign in *Cushing's syndrome,* which will be manifested by other symptoms of weakness hypertension, adiposity, etc (see Plate 87, D).

## Juxta-Articular Nodes

Juxta-articular nodes are fibrous, subcutaneous lesions often seen in chronic disease (Plate 96, B, C)

**Symptoms.** The lesions are firm, sometimes tender, subcutaneous nodules, characteristically developing near joints The number varies from one to ten or more The overlying skin is usually not adherent and is normal

**Etiology.** Most patients have rheumatoid arthritis, but occasionally syphilis or other chronic diseases will be causative

**Treatment.** The underlying disease should receive appropriate therapy

## Maculoerythematous Eruptions

The sides of the trunk may be the site of a transitory, erythematous and macular eruption of which the protype is the *syphilitic roseola* Such a rash may be caused by *drugs.* It might also represent modified *measles* or *scarlet fever* in a partially immune subject Brucellosis *infectious mononucleosis,* and *systemic lupus erythematosus* are also possibilities Appropriate studies including laboratory determinations, will usually determine the cause It should be emphasized that one should not pass over lightly such an important clinical sign

## Mouth Lesions

Mouth lesions frequently accompany many dermatoses Careful examination of the accessible mucous membranes should always be part of the cutaneous examination *Burning tongue,* while distressing seldom is meaningful otherwise The tongue may reveal smooth atrophy, which should lead one to consider *pernicious anemia and syphilis* A diagnosis of *amyloid disease* may be strongly suspected from the presence of a painful macroglossia Spongy, receding and bleeding gingivae frequently denote a *deficiency of vitamin C.* Hypertrophic gingivae are not uncommon in *leukemia and other blood dyscrasias* Hyperpigmentation near the margin of the teeth may denote *intoxication due to a heavy metal.* Oral manifestations of *syphilis* may be noted in all stages of the disease The chancre is most frequently seen in the tonsillar area an injected pharynx is always present in the early secondary stage, late ulcerative or destructive lesions in late syphilis are observed infrequently but should not be overlooked *Tubercu*

commonly observed In *vitamin C deficiency*, there is usually an associated gingivitis The systemic symptoms in acute infections, such as meningococcic meningitis or Rocky Mountain spotted fever, are sufficient to indicate the category of the disease

## Pyoderma

Recurrent *furunculosis* and other superficial pyogenic infections may indicate an otherwise asymptomatic *diabetes* One should also keep in mind that patients with *leukemia* are also vulnerable to such infections

## Pyogenic Ulcerations

Chronic, indolent ulcers (pyoderma gangrenosa), particularly of the legs, may be explained by coincidental *ulcerative colitis* The possibility of *sickle-cell anemia* should also be kept in mind

## Red Palms

Diffuse, bright red discoloration of the palms, often accompanied by hyperhidrosis is not uncommon in *hepatic disease*. However, in most instances no relationship with an internal disease will be demonstrated

## Seborrheic Dermatitis

The incidence of this disorder is somewhat higher in certain diseases of the central nervous system, notably *paralysis agitans* and *epilepsy*

## Telangiectasia

Ectatic blood vessels are thought to be often caused by trauma They appear in old age, follow repeated exposure to the *elements* occur in [illegible] spider nevus, when single or few in number, and particularly in children, usually has no significance Occasionally they occur in small or in rather large numbers in patients with liver disease, blood dyscrasias, etc Stellate nevi should not be confused with the organized, often painful lesions of periarteritis nodosa

## Urticaria

The usual cause is a drug or a food in a patient conditioned by emotional factors An occasional instance of urticaria may be encountered in which the cause is intestinal parasites, hepatitis, nephritis a malignancy, or leukemia

## Vesiculobullous (Pemphigoid) Eruptions

Occasionally patients exhibiting an eruption which is indistinguishable from dermatitis herpetiformis are *found to* have an *internal malignant growth*, most often ovarian in origin

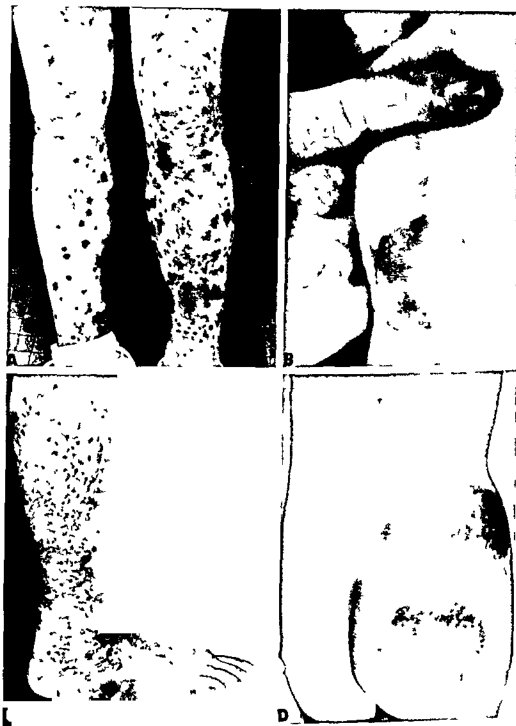


**Plate 97**

*The Skin as a Mirror Purpura* A purpura of the idiopathic type recurrent for several years B thrombocytopenic purpura developing in a patient with discoid lupus erythematosus C hemorrhagic response to phenobarbital D this patient had hypoprothrombinemia

## Verrucae (Warts)

Warts are benign lesions of viral etiology which are both moderately contagious and autoinoculable

Symptoms The lesions are most commonly observed on exposed parts, particularly on the fingers and hands However any part of the body may be affected including the mucous membranes Children are most vulnerable There would appear to be a tremendous *individual variation in susceptibility* Patients are often seen with one wart which they have had for years In contrast, in another patient several hundred warts may appear within the space of a few weeks Warts occasionally are seen in scratch mark (linear) distribution Warts on the male beard are notoriously difficult to eradicate

The *common wart* (*verruca vulgaris*) is first seen as a small rough surfaced elevation (Plate 98 A) The lesion enlarges to a variable degree but tends to grow peripherally and in thickness to a point after which there is no further increase in size Paring of the surface reveals a translucent central portion The color of the lesion may become yellowish or brownish A special type of wart is the kind seen on the nail fold (periungual wart) (Plate 98 C) Occasionally patients present multiple lesions on the sides and base of the nails without warts on any other part of the body

A *plantar wart* (*verruca plantaris*) varies from an ordinary wart only in the tumor mass being for the most part below the skin surface (Plate 98 D) This is probably due to the effect of pressure In contradistinction to warts on other parts of the body there is usually considerable pain although this symptom may vary with the individual *Mosaic warts* (Plate 99 A) consist of small verrucae which have coalesced to form plaques. These are usually located *on the sole*

*Verrucae acuminatae* (*venereal warts*) are seen on the mucous mem-
b [illegible]
T [illegible]
a [illegible] secondary infection there may be purulent exudate, with an offensive rather characteristic odor

*Verrucae planae* (*flat warts*) often occur on the face and the backs of the hands tend to be symmetric *in distribution*, and consist of small flat topped skin colored [illegible] ules At times the lesions are dissem [illegible] Plate 98 F)

In the *digita* [illegible] *variety*, the warty mass projects in [illegible] ) The diameter of the base is usually not *much* larger than that of the lesion itself

*Etiology* A viral etiology is *established* however there are so many types and varieties of warts *that more* than one species of virus may be incriminated Individual *susceptibility to* warts varies greatly Injury may provide a portal of entry or *determine the* site the observation has been made that periungual warts *often occur* in individuals who pick their fingers or bite their nails

*Pathology* There is hyperkeratosis and parakeratosis The epidermis

# Benign Tumors

TODAY THE public is highly conscious of cancer and its potentialities Almost any type of skin lesion, even those of familiar pattern, will excite curiosity and not infrequently cause considerable uneasiness This is not illogical, since all the methods of visual and auditory communication are used to warn against delay in seeking diagnosis Tumors of the skin are exceedingly common, but by far ***the largest number offer no threat to the health of the individual.*** It is a practical advantage to catalog accurately tumors of the skin and to be able to advise the appropriate therapy It is of course important not to overlook a malignant or potentially malignant lesion of the skin Faulty negative diagnosis of cancer leads either to procrastination or to needless, ill advised meddling Contrary to general belief, the successful ***treatment of benign tumors is not always easily accomplished,*** nor is it always possible to obtain a good cosmetic result The practitioner who undertakes to remove benign lesions should have practical training and experience It is sometimes best to leave the lesions alone, particularly when they are on exposed surfaces of the skin, unless a good cosmetic result may be visualized One cannot generalize too inclusively, since in each patient one must consider individual variabilities concerned with the possible removal, as well as the advantages or disadvantages, and particularly the psychologic factors involved and the expense entailed by the procedure One must also consider carefully the result of a possible error in diagnosis

Benign tumors of the skin may be classified as benign solid growths and as cystic lesions

## Benign Solid Growths

Apart from the common denominator of benignancy, skin tumors possess individual clinical features The diagnosis of such lesions is usually not difficult Eight varieties of benign solid growths are described below, the nevoid anomalies (including moles) are discussed in Chapter 16

## Verrucae (Warts)

Warts are benign lesions of viral etiology, which are both moderately contagious and autoinoculable

Symptoms The lesions are most commonly observed on exposed parts, particularly on the fingers and hands However, any part of the body may be affected including the mucous membranes Children are most vulnerable There would appear to be a tremendous *individual variation in susceptibility* Patients are often seen with one wart which they have had for years In contrast, in another patient several hundred warts may appear within the space of a few weeks Warts occasionally are seen in scratch mark (linear) distribution Warts on the male beard are notoriously difficult to eradicate

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*Verrucae acuminatae* (*venereal warts*) are seen on the [illegible]

[illegible] secondary infection there may be purulent exudate, with an offensive rather characteristic odor

*Verrucae planae* (*flat warts*) often occur on the face and the backs of the hands tend to be symmetric in distribution, and consist of small, flat topped skin-colored slightly rough surfaced papules At times the lesions are disseminated widely over the extremities (Plate 98 F)

In the *digitate* (*verruca digitata*) *or the filiform variety*, the warty mass projects in threadlike elevations (Plate 99 D, E) The diameter of the base is usually not much larger than that of the lesion itself

Etiology A viral etiology is established, however, there are so many types and varieties of warts that more than one species of virus may be incriminated Individual susceptibility to warts varies greatly Injury may provide a portal of entry or determine the site the observation has been made that periungual warts often occur in individuals who pick their fingers or bite their nails

Pathology There is hyperkeratosis and parakeratosis The epidermis

*Chapter 22*

# Benign Tumors

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Benign tumors of the skin may be classified as benign solid growths and as cystic lesions.

## Benign Solid Growths

Apart from the common denominator of benignancy, skin tumors possess individual clinical features. The diagnosis of such lesions is usually not difficult. Eight varieties of benign solid growths are described below, the nevoid anomalies (including moles) are discussed in Chapter 16.




Plate 99

*Verrucae* A *mosaic warts* numerous small warts in a group with maceration B *verrucae acuminatae* warts in this location often respond to applications of podophyllin C *verruca vulgaris* lesions on lip and tongue D *verrucae digitatae* such warts are readily destroyed but recurrence is common E solitary *filiform verruca* F *pedunculated fibroma* probably a form of wart

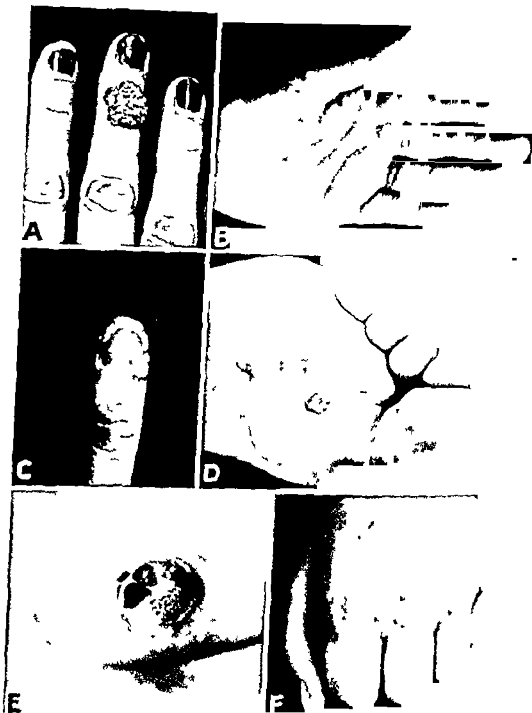



Plate 98

Verrucae A *Verruca vulgaris* the surface of this solitary lesion is firm and irregular B multiple warts C *periungual warts* constitute a special problem in therapeusis D *plantar wart* of the usual type the bulk of the lesion is below the surface of the skin E *mosaic warts* in which there is coalescence of numerous superficial warts F, *verrucae planae* or flat warts














Plate 99

*is papillomatous and the rete pegs are elongated and bent inward at the outer margins* Distinctive are the pyknotic nuclei with heavily clumped *chromatin in the granular layer The cytoplasm is vacuolated*

In verruca plana the epidermis is acanthotic and covered by hyper keratosis Vacuolated cells are present in the granular layer

**Differential Diagnosis.** There is usually little difficulty in the diag*nosis of warts Flat warts of the face and papular acne* will not be confused if the lesions are examined carefully under a hand lens Plantar warts and *calluses are sometimes confused It the wart is pared down with a sharp* scalpel a positive diagnosis may be made from the appearance of *brown striae or dots* in the translucent mass A callus has a homogeneous appear ance Venereal warts often resemble the *syphilitic moist papule.* The latter lesions tend to be flat and exhibit *more inflammation,* in any case a sero logic test should always be made A solitary wart under the free edge of the nail and *melanoma* may at times be confused

**Treatment.** Treatment is almost always advisable One should not wait for nature to take its course, as spontaneous cure may not occur for two or three years or even longer The problem is not always simple For tunately there are elective types of treatment, but good judgment in se lecting the remedy is necessary One must be careful not to leave numerous scars, particularly on the hands or face of women or girls The lay public erroneously considers warts to be trivial and thinks a good doctor is capable of removing any type of wart

1 *Common Warts (Including Plantar Warts)* With a solitary lesion in an inconspicuous location, the most satisfactory treatment in my experience is electrodesiccation and curettage under procaine analgesia The cutting current should never be used, this produces unnecessary scarring and may destroy underlying tissues *The same remedy may be used for the* treatment of multiple warts, if the technique is carefully mastered, very *little scarring will occur*

Since surgical excision of a plantar wart often produces a painful linear scar this method should never be used on the soles, and for other warts it should be reserved for the very exceptional patient

When there is only one or a few warts, roentgen irradiation may be considered This should be undertaken only by a dermatologist who will take precautions to prevent any possibility of radiodermatitis Particularly with plantar warts, a short series of two to four weekly treatments of 600 r to a pared-down lesion with the surrounding normal skin protected by lead foil, is a highly successful procedure The total dose of 2400 r should not be exceeded One disadvantage of the use of x-rays is that, if the treatment is unsuccessful, subsequent surgical measures such as electro-desiccation are followed by very slow healing

Refrigeration is *another acceptable method Either solid* carbon dioxide moulded into a pencil or liquid nitrogen is applied directly to the lesion for a predetermined period usually *a few seconds* This produces a local inflammatory reaction

In young children and in the elderly when the warts are in a conspicuous location or are numerous therapy should be undertaken with caution even to the extent of using placebic measures

At times injections of bismuth subsalicylate are effective The dose is usually 1 to 2 cc intramuscularly repeated once weekly for six to eight weeks Some observers consider this a form of psychotherapy as it is well known that for flat warts particularly in children suggestion therapy may be effective in approximately 50 per cent of patients The apparent paradox of the response of a virus infection to suggestion therapy has never been satisfactorily explained

2 *Periungual Warts* These warts are resistant to treatment with x ray or radium and to acids Best results are usually obtained with electrodesiccation Special care must be taken to avoid destruction or injury of the tissues at the base of the nail as this may lead to deformities of the nail plate

3 *Flat Warts* Flat warts should be treated carefully Since they are small, destructive measures may leave scars If desiccation is undertaken the spark should be fine

¼ grain twice daily or to oral bismuth (Bistrimate)

4 *Mosaic Warts* X rays should not be employed in *treatment of* mosaic warts as they are ineffectual electrodesiccation is *not usually* advisable because of the resulting wound which heals slowly and usually incapacitates the individual Perhaps the *best initial* treatment is the regular application once daily of 40 per cent salicylic acid plaster (Duke) Care must be taken that the plaster *does not overlap on the normal* skin Within a few days there will be considerable exfoliation and this may be followed by the use of pumice or sandstone Silver nitrate stick may also be applied to the area Another agent which is often effective is an ointment containing 20 per cent *formaldehyde*

5 *Venereal Warts* Venereal warts often respond to application of podophyllin This drug may be diluted to 15 per cent in compound tincture of benzoin or in alcohol and *should* be applied to the lesions with instructions to the patient to wash off in four hours Podophyllin should not be used on the face and the patient should be warned against its effect on the eye as it produces a severe conjunctivitis Occasionally patients are not responsive to podophyllin and in such instances the use of electrodesiccation with procaine anesthesia is necessary Podophyllin is ineffectual in other types of warts

## Molluscum Contagiosum

Molluscum contagiosum is a virus disorder characterized by the presence of one or more skin colored slowly enlarging papules (Plate 100 A B)




Plate 100

*Solid Benign Tumors Molluscum contagiosum* A skin colored papules with central umbilication B secondary pyogenic infection is common *Keloids* C, in a characteristically vulnerable location in the presternal area D such lesions are more common in the Negro and may follow a thermal burn

Symptoms The lesions are skin colored hemi globular, and solid and usually present a ***central umbilication*** They occur on any part of the body, but particularly on the trunk and the eyelids Secondary pyogenic infection is frequent, this results in spontaneous cure The lesions may be readily diagnosed in almost every case

Differential Diagnosis Molluscum lesions are smooth, whereas warts are rough Under Wood s light warts fluoresce brightly, whereas molluscum lesions are dark

Etiology The condition is caused by a virus Children and athletes (wrestlers) are most vulnerable

Pathology The epidermis grows downward as multiple lobules The molluscum body is found in the epidermal cells This is a homogeneous eosinophilic inclusion body which is oval and contains the virus

Treatment The lesions may be curetted off with a sharp curette and a quick motion After bleeding is arrested, the base should be painted with Zephiran solution Occasionally painting with a solution of podophyllin (15 per cent) is effec

chloracetic acid may be

employed and one of

are numerous

## Keloid

A keloid is a dense overgrowth of fibrous tissue occurring usually at the site of an injury, as a burn or an abrasion of the skin (Plate 100 C D)

Symptoms When fully developed a keloid is elevated and pinkish, and the surface is usually traversed by telangiectatic vessels Palpation reveals a solid tumor mass There is a variable degree of pruritus and pain is occasionally present

Differential Diagnosis Keloid is to be distinguished from *hypertrophic scar* in that keloid tends to increase in size long after healing has taken place, whereas the hypertrophic scar represents only the total area of skin damage.

Etiology A strong individual predisposition and a familial *tendency* are noted Negroes are particularly vulnerable Certain areas of the body, such as the mid sternal region are more susceptible than others

Treatment 1 For the best results the lesions should be treated *early* If the lesion has been present less than three months a good result may be expected from use of *x radiation* The dose should be conservative In three to six months the lesion becomes organized the cells mature and are less radiosensitive The keloid then may be left untreated or, if therapy is considered important excision followed by *x ray therapy* is the correct procedure Excision alone is not successful as there is always a re-

curre

di

w minute This procedure is usually quite painful and the sensation lasts for several minutes after termination of treatment Several applications are necessary

## Fibroma

*Fibroma* is a firm nodule or tumor (Plate 101, A)

Symptoms The lesion is *skin colored* is usually attached to the overlying epidermis is painless and may remain small or develop into a lesion several centimeters in diameter




**Plate 100**

*Solid Benign Tumors Molluscum contagiosum* A, skin colored papules with central umbilication B, secondary pyogenic infection is common *Keloids* C, in a characteristically vulnerable location in the presternal area D, such lesions are more common in the Negro and may follow a thermal burn

Symptoms. The lesions are skin colored, hemi-globular, and solid, and usually present a ***central umbilication.*** They occur on any part of the body, but particularly on the trunk and the eyelids Secondary pyogenic infection is frequent, this results in spontaneous cure The lesions may be readily diagnosed in almost every case

Differential Diagnosis Molluscum lesions are smooth, whereas warts are rough Under Wood's light warts fluoresce brightly, whereas molluscum lesions are dark.

## Neurofibromatosis

Neurofibromatosis or von Recklinghausen's disease is a polymorphous syndrome which includes fibrotic skin tumors and often lesions in the bones and other organs (Plate 101 B C)

**Symptoms** The disorder appears early in life and often becomes more pronounced at puberty The initial lesions are brown pigmented macules (cafe au lait spots) usually on the lower trunk and often elliptical This may be the only manifestation of the disease Most patients develop soft tumors which vary considerably in rate and extent of development The tumors may be pedunculated or sessile Some are soft and compressible and to the palpating finger may feel like a hernial ring Occasionally they are painful They may be skin colored or pigmented often both types are present Sarcomatous degeneration occurs infrequently Osteoporosis other skeletal manifestations and tumors in various other organs are not uncommon

**Etiology** The condition is classed as nevoid Heredity appears to be a proved factor

**Pathology** Mixed neural and fibrous elements are present in the cutis and wavy fibrils are present and stain pale blue

**Treatment** Lesions which are cosmetically important (particularly on the face) or which are painful or annoying may be surgically excised

## Granuloma Pyogenicum

Granuloma pyogenicum is a rapidly developing often solitary granulomatous lesion (Plate 102 A)

**Symptoms** The condition may appear on any part of the body but usually occurs at the site of trauma A small bright red nodule appears It is moist and crusted on the surface and rapidly increases in size The lesion tends to bleed readily

**Differential Diagnosis** The condition resembles *sarcoma* and *amelanotic melanoma,* but these lesions are dry

**Etiology** The lesion develops because of a combination of injury and infection with Staphylococcus

**Pathology** Numerous newly formed blood vessels are present They are held in a loose fibrous network The presence of polymorphonuclear leukocytes points to a pyogenic origin as does the presence of ulceration

**Treatment** A safe procedure is to excise the lesion for histologic study Unless the entire lesion is destroyed or excised it will recur promptly

## Glomus Tumor

(L *glomus* a ball made by winding)

Glomus tumor is a benign tumor containing muscle and nerve tissue due to an overgrowth of the glomus body (*Plate 102 F*)

**Symptoms** Most lesions occur on the extremities particularly beneath the fingernail and consist of small bluish red tumefactions The

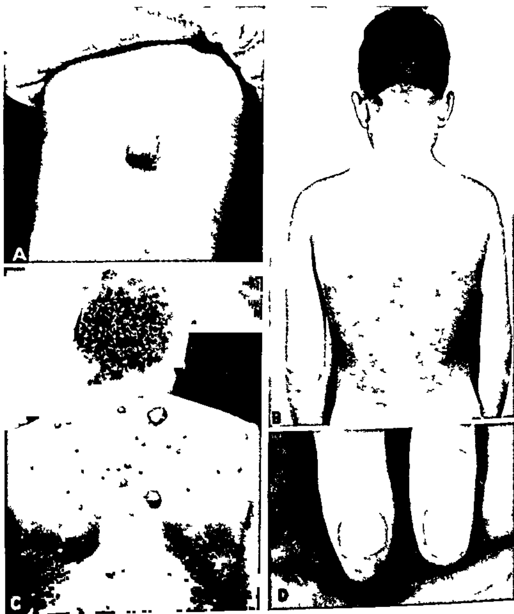



**Plate 101**

*Fibrotic Disorders Fibroma* or cutaneous nodule A firm deeply situated nodule attached to the skin *Von Recklinghausen's disease (neurofibromatosis)* B the early manifestations consist of oval shaped café au lait macules as in the left lumbar region and diffuse freckling C fibrotic tumors of various sizes and clinical appearance *Fibroxanthoma (histiocytoma)* D solitary tumor

**Differential Diagnosis** Fibroma must be distinguished from *lipoma*, which is soft and usually subcutaneous not attached to the skin and larger than fibroma *Keloid and hypertrophic scars* are more irregular and either increase rapidly in size or follow exactly the pattern of a defect caused by injury

**Etiology** There is often a history of trauma

**Treatment** Surgical excision is indicated if pain is present Otherwise the lesion may be left untreated

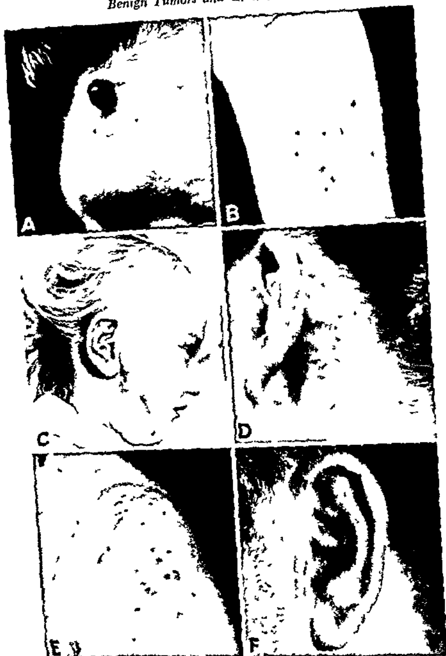



Plate 102

*Benign Tumors and Granulomas* A *granuloma pyogen cum* develops rapidly at the site of an injury and is often confused with sarcoma B granulomatous lesions at sites of insect bites C ulcerative *beryll um granuloma following* accident with fluorescent lamp D inflammatory *steatomata* in favorite location. E *leiom joma cutis* d screte painful smooth m iscle tumors F *glomus tumor* a solitary exquisitely painful lesion of the ear lobe usually the process is observed in a nail bed.

lesion is almost always solitary and is characterized by exquisite pain and tenderness

**Pathology** Large vascular spaces are lined by the glomus cells which resemble epithelial cells Nonmedullated nerve fibrils are present in great numbers

**Treatment** Destruction by electrodesiccation or surgical excision is effective

### Leiomyoma

Leiomyoma is a smooth muscle tumor forming small painful lesions in the skin (Plate 102 E)

**Symptoms** The lesions are elevated firm and yellowish red to brownish red in color are usually symmetrically distributed and may affect any part of the body They are frequently observed on the face and extremities but may also appear on the trunk The lesions are tender and sometimes spontaneous pain occurs

**Pathology** Smooth muscle fibers in the upper and mid cutis run in various directions and frequently are admixed with fibrous tissue

**Treatment** If the lesions are not too numerous they may be surgically excised otherwise treatment by means of solid carbon dioxide or by electrodesiccation will give the best results

## Cystic Lesions

The skin and mucous membranes are subject to the formation of a variety of cystic lesions The characteristics of six such growths are discussed here

### Milium

Milium is a minute cyst occurring usually on the upper part of the face and the scrotum (Plate 103 A)

**Symptoms** The lesions are pearly white and firm and may increase from pin head size to 1 or 2 millimeters in diameter

**Etiology** The lesions are thought to derive from lanugo hair follicles They are occasionally observed in scleroderma epidermolysis bullosa and some other dermatoses

**Treatment** For cosmetic reasons the lesions may be pierced by a bistoury and expressed with a comedo extractor

### Sebaceous Cysts

Sebaceous cysts are soft skin colored growths with a predilection for the scalp face or back (Plate 103 C)

**Symptoms** The subcutaneous lesion appears insidiously gradually enlarges and is usually solitary although two or more lesions are occasion

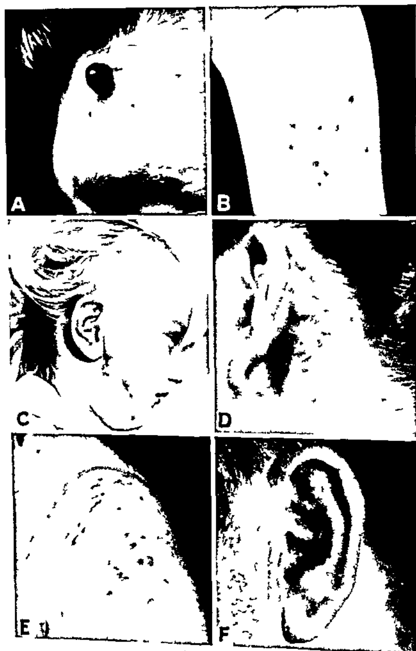



Plate 102

*Benign Tumors and Granulomas* A granul ma p ogen —

usual y the process is observed in a nail bed. ... e y painful lesion of the ear

ally seen The plugged follicle mouth and attachment to the skin aid in diagnosis

**Differential Diagnosis** One should always be on guard against the possibility of a *dermoid cyst* These usually occur early in life and are observed around the eyes nose and neck *Dental cysts* (infra) must also be distinguished

**Treatment** There is a choice of remedies Sometimes for small lesions 225 r of roentgen rays filtered through 3 mm of aluminum is effective Another common procedure is desiccation of the central portion after injection of a drop of procaine into the skin overlying the cyst The area then is punctured and the contained material expressed Frequently the cyst wall can be grasped with tooth forceps and removed or the cyst contents may be expressed and the lining wall phenolized Surgical excision may be undertaken but the final cosmetic result will not be as satisfactory as with one of the above procedures

## Synovial Cyst

*A synovial cyst is a degenerative cyst usually seen over the distal interphalangeal joint (Plate 103 B)*

**Symptoms** The lesion appears abruptly and is dome shaped and filled with yellow viscid fluid In many instances dystrophic nail changes are produced

**Etiology** The lesion is thought to arise from the capsule of the underlying joint

**Treatment** Solid carbon dioxide applied with firm pressure for 30 seconds is the treatment of choice There is some immediate (though bearable) pain The treatment may have to be repeated several times to achieve complete cure Hydrocortisone injected into the lesion may be tried

## Mucous Retention Cyst

*The lower lip is the most common location of a mucous retention cyst* (Plate 103 D)

**Symptoms** *A soft fluctuant rounded elevation gradually enlarges The overlying mucosa appears normal*

**Differential Diagnosis** The bluish red color of angioma is distinctive and serves to differentiate the two conditions

**Treatment** Under procaine anesthesia the overlying mucosa and cyst wall are clipped away with scissors bringing the bottom of the cyst in continuity with the mucosa of the lip

## Dental Cyst

A dental cyst is usually located on the chin or sides of the neck

**Symptoms** The cyst originates in an infected gingiva a sinus tract burrows through the tissues and the cyst presents on the skin surface of the chin or at the side of the neck (Plate 103 F)

**Treatment** The origin of the cyst must be discovered and dealt with

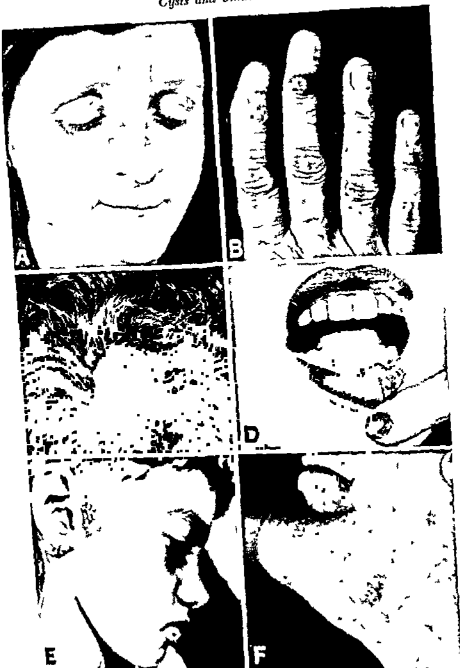



Plate 103

**Cysts and Sinuses** A milium minute firm white lesions usually multiple B *synovial cyst* containing gelatinous material C *sebaceous cyst* (wen) may enlarge to size of a hen's egg D *mucous retention cyst* must be differentiated from acquired angioma E *pre auricular sinus* secondarily infected F *dental sinus* the origin being a carious tooth

ally seen The plugged follicle mouth and attachment to the skin aid in diagnosis

**Differential Diagnosis.** One should always be on guard against the possibility of a ***dermoid cyst.*** These usually occur early in life and are observed around the eyes, nose, and neck ***Dental cysts*** (infra) must also be distinguished

**Treatment.** There is a choice of remedies Sometimes for small lesions 225 r of roentgen rays, filtered through 3 mm of aluminum, is effective Another common procedure is desiccation of the central portion, after injection of a drop of procaine into the skin overlying the cyst The area then is punctured and the contained material expressed Frequently the cyst wall can be grasped with tooth forceps and removed, or the cyst contents may be expressed and the lining wall phenolized Surgical excision may be undertaken, but the final cosmetic result will not be as satisfactory as with one of the above procedures

## Synovial Cyst

A synovial cyst is a degenerative cyst usually seen over the distal interphalangeal joint (Plate 103, B)

**Symptoms.** The lesion appears abruptly, and is dome shaped and filled with yellow viscid fluid In many instances, dystrophic nail changes are produced

**Etiology.** The lesion is thought to arise from the capsule of the underlying joint

**Treatment** Solid carbon dioxide applied with firm pressure for 30 seconds is the treatment of choice There is some immediate (though bearable) pain The treatment may have to be repeated several times to achieve complete cure Hydrocortisone injected into the lesion may be tried

## Mucous Retention Cyst

The lower lip is the most common location of a mucous retention cyst (Plate 103, D)

**Symptoms.** A soft, fluctuant, rounded elevation gradually enlarges The overlying mucosa appears normal

**Differential Diagnosis** The bluish red color of angioma is distinctive and serves to differentiate the two conditions

**Treatment** Under procaine anesthesia, the overlying mucosa and cyst wall are clipped away with scissors bringing the bottom of the cyst in continuity with the mucosa of the lip

## Dental Cyst

A dental cyst is usually located on the chin or sides of the neck

**Symptoms.** The cyst originates in an infected gingiva, a sinus tract burrows through the tissues, and the cyst presents on the skin surface of the chin or at the side of the neck (Plate 103 F)

**Treatment** The origin of the cyst must be discovered and dealt with

*Chapter 23*

# Premalignant and Malignant Tumors, Including Lymphoblastoma

AT PRESENT the best hope for reduction in the mortality of cancer of the skin lies in its early recognition and prompt and adequate treatment, and in the destruction of premalignant lesions before degenerative changes occur It is well known that a damaged skin is somewhat more vulnerable than normal skin to malignant degeneration Predisposing alteration includes such conditions as (1) residual changes from repeated and excessive amounts of ultraviolet rays (farmers, sailors, sun bathers), (2) radiodermatitis (3) long standing ulcerations, and (4) scar tissue following burns or certain infections such as syphilis, lupus erythematosus, and lupus vulgaris In addition, in a few premalignant disorders, including leukoplakia, junction nevus, and keratoses, the tendency to degeneration dictates careful and adequate therapy

All of these abnormal states should be considered potentially dangerous In general, also, patients with fair skin and particularly with blue eyes should be warned against repeated sunburn As mentioned in the discussion of radiodermatitis, meticulous care should be taken to prevent x ray reactions, most of which are due to carelessness but unfortunately also result occasionally from ignorance Clinical determination of the transition from chronic ulc [illegible] ould remember [illegible] be invaluable [illegible] should be instructed to report any change in the appearance of the skin

## Leukoplakia

If the only manifestation of leukoplakia is a macular, pure white lesion, the patient should be instructed to stop smoking *permanently* If the lesion is elevated and keratotic, a biopsy is indicated and electrodesiccation may

## Dermoid Cyst

Most dermoid cysts occur early in life and are located in or near the embryonic lines of fusion They commonly occur near the outer canthus, in the median raphe of scrotum and perineum, and on the nose and neck The lesions contain varied epidermal structures, including hair and sebaceous material

**Treatment.** Surgical excision is advised

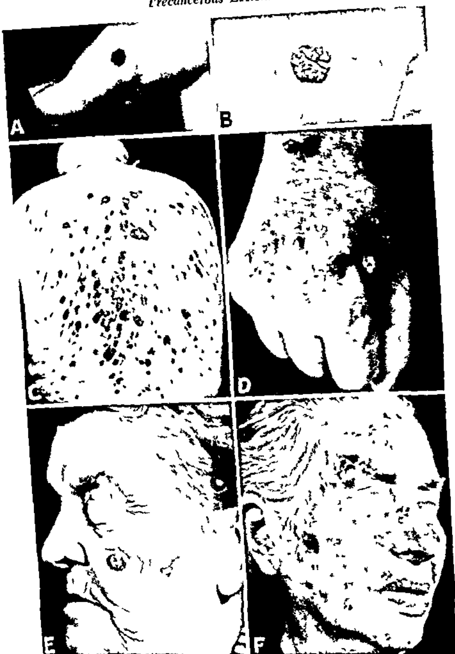



Plate 104

actinic or senile type with some beginning basal cell epitheliomas

be required (Plate 106, A) The patient should be kept under periodic surveillance until cured (see page 219)

## Junction Nevus

This has been mentioned in the Chapter on Nevi The lesion may *appear at any age, may be macular or papular,* is *always non hairy* and characteristically *smooth surfaced* and of a *slate blue* or *black color.* It may be difficult to distinguish from *blue nevus,* from *thrombotic angioma,* and from *pigmented basal cell epithelioma*

**Pathology.** The nevus cells are located entirely within the epidermis The nevus cell has a hyperchromatic nucleus and varies in shape and size The cytoplasm is clear and melanin is frequently present The nests of nevus cells are more active at the dermal epidermal junction and are called *theques* The nests appear to be on the verge of "dropping off" into the dermis Activity and potential malignant changes are suggested by anaplasia, by invasion of the upper areas of the epidermis and by lymphocytic inflammatory reaction

**Treatment** It is not always practical to remove lesions if numerous However, as a prophylactic measure, a lesion having the features of a junction nevus located where it is subject to trauma, or where there has been recent increase in growth should be conservatively but completely excised It is considered bad practice to use electrolysis, acids or other destructive measures or physical agents X rays and radium are ineffectual

## Keratoses

Three main types of keratotic lesions may occur arsenical actinic (senile) and seborrheic keratoses These are discussed separately

### Arsenical Keratoses

Months or years after the ingestion or injection of arsenic, particularly of the inorganic type yellowish to brown rough surfaced elevations may appear on the palms or soles or elsewhere on the body

**Treatment** If they are numerous and especially if they are present on the palms and soles such lesions are often difficult to cure BAL (British Anti Lewisite) has been used with fair to indifferent results An emollient cream should be applied to the area once daily An ozonide cream occasionally helps Arsenical keratoses on the body appear more likely to become malignant and their destruction by electrodesiccation is advisable

### Actinic (Senile) Keratoses

Middle aged and elderly individuals with blue eyes and fair skin are particularly prone to develop freckles on the face and backs of hands These later may *become warty excrescences* (Plate 104 F) Prolonged and *repeated exposure to the sun's rays* and *mature age* are important factors in the etiology

**Symptoms** The first evidence is the presence of a pigmented macule (freckle) The area may become scaly and finally palpable The scale usu

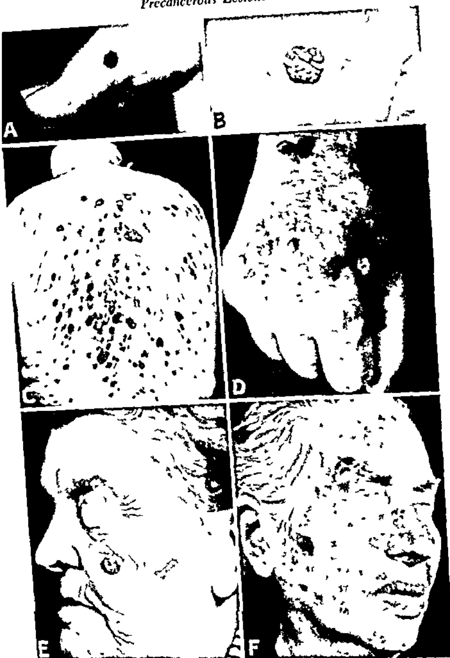



Plate 104

develops at the base E *keratoacanthoma* while not a threat is difficult to distinguish clinically from prickle-cell epithelioma and other tumors F, *multiple keratoses* of the actinic or senile type with some beginning basal cell epitheliomas

be required (Plate 106, A). The patient should be kept under periodic surveillance until cured (see page 219).

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the lesion is at an early stage It is important therefore to be alert to the symptoms and signs of the various types of malignant neoplasms of the skin It may be mentioned that the results of treatment of such neoplasms are satisfactory except when widespread dissemination through the body has already occurred Any component of the skin may become involved in a malignant process The epithelial tumors are the most numerous in the overwhelming number of patients these lesions are primary in the skin

## Basal Cell Epithelioma

Basal cell epithelioma (Plate 105) is the easiest to diagnose and the least threatening to life of all the cutaneous malignancies

*Symptoms* There are a number of clinical forms In most patients the lesion occurs on the face it has been noted that it often develops in the *embryologic lines of cleavage* The buccal mucosa is occasionally involved

In the *button like* variety a firm nodule extends above the surface of the skin The lesion is skin colored or waxy the border is elevated and rounded and there is often a central umbilication Eventually ulceration occurs and a crust forms over the surface Telangiectasia almost always may be noted Growth is characteristically slow In the *crusted ulcerative* variety the diagnosis is suspected mainly on the history of duration for one or more years Without treatment the process will probably progress far beyond what is expected from the clinical appearance In *morphea like epithelioma* (Plate 106 B) there is a strong resemblance to scleroderma but examination of the periphery shows an elevated pearly border *Multiple flat basal cell epitheliomas* (Plate 105 D) are often misdiagnosed as psoriasis or some other inflammatory disease These are extremely superficial and are usually located on the trunk Frequently there is spontaneous healing toward the middle of the mass but there is always an active border In a lesion of long standing there may be a crust over the surface In the rare instances in which the lesion progresses in size at a rate much in excess of that ordinarily to be expected one should be alert to the possibility of *anaplastic epithelioma* Basal cell epithelioma does not metastasize and in the anaplastic variety the chief difficulty is in finger like projections which are impossible to delineate clinically At times a lesion becomes deeply pigmented and the dark brown color may suggest another type of lesion notably a melanoma

*Etiology* Most patients are of middle age or older The frequent occurrence in embryologic lines of cleavage s[illegible]
factor [illegible]
tho igh [illegible]
with [illegible]
[illegible] re is often a history of ingestion of arsenic in patients presenting multiple flat basal cell epitheliomas on the trunk

*Pathology* The tumor extends downward from the epidermis as darkly staining basal cells The peripheral nuclei maintain a palisade ar

ally falls off or is picked away, but a new one soon forms If it is untreated, the lesion usually increases in size, becomes infiltrated, and in time becomes an *epithelioma, particularly* with continued exposure to the sun's rays

**Pathology.** Hyperkeratosis and parakeratosis are noted The epidermis is *usually acanthotic and sometimes verrucous* Increased mitosis and mild anaplastic tendencies may suggest a low grade epidermoid carcinoma

**Treatment** If the lesion is of recent origin and superficial a satisfactory *treatment consists of scraping off the scale* with a dermal curette and applying *trichloracetic acid,* usually without use of a local anesthetic If the lesion is somewhat larger and has been present for several months, cure *is made more certain by use of electrodesiccation* with procaine anesthesia When the patient is elderly, x ray therapy is to be considered Patients with a tendency to develop keratoses should be warned against overexposure *to the sun, and a bland grease should be applied* to the face and backs of hands once daily

### Seborrheic Keratoses

The lesions of this disorder occur in middle aged or elderly people and have a predilection for *the trunk* (Plate 104, C) They consist of *papules or nodules covered* with *a greasy scale* and forming warty, brownish elevations In a small percentage of patients, epithelioma may supervene

**Pathology.** Hyperkeratosis is variable The epidermis shows anas*tomosing bands of epithelial cells* which *stain* darkly and resemble basal cells Numerous horny (keratin) cysts are seen

**Treatment** Small inactive lesions may be treated expectantly, but *for cosmetic reasons or* when *an occasional lesion increases in size* it should be destroyed by electrodesiccation, using procaine anesthesia X-ray therapy is occasionally useful

### Cutaneous Horn

A cutaneous horn is an acquired firm digitate outgrowth (*Plate* 104 D)

**Symptoms** The lesion may develop *from apparently* normal skin or from a keratosis or other skin disorder The lesion grows slowly, but if neglected may eventually reach a length of several millimeters Basal cell epithelioma not uncommonly develops at the base, and the presence of a rounded elevated *border and telangiectasia leads to its recognition*

**Differential Diagnosis** Cutaneous horn superficially resembles *digitate verruca,* but the latter is usually of shorter duration and not so firm

***Treatment*** *Electrosurgical removal is simple* and effective

## Malignant Neoplasms

In no other part of the body is there such a favorable opportunity for the clinical diagnosis of cancer as in the skin Furthermore, the public is *now* "cancer conscious" and the patient usually presents himself when

the lesion is at an early stage It is important, therefore, to be alert to the symptoms and signs of the various types of malignant neoplasms of the skin It may be mentioned that the results of treatment of such neoplasms are satisfactory except when widespread dissemination through the body has already occurred Any component of the skin may become involved in a malignant process The epithelial tumors are the most numerous, in the overwhelming number of patients, these lesions are primary in the skin

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border [illegible]

Ir [illegible]

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Etiology Most patients are of middle age or older The frequent occurrence in embryologic lines of cleavage suggests a possible congenital factor Since the lesions usually occur on exposed skin ultraviolet rays are thought to play a significant role in many cases, particularly in patients with fair complexion and blue eyes There is often a history of ingestion of arsenic in patients presenting multiple flat basal cell epitheliomas on the trunk

Pathology The tumor extends downward from the epidermis as darkly staining basal cells The peripheral nuclei maintain a palisade ar-

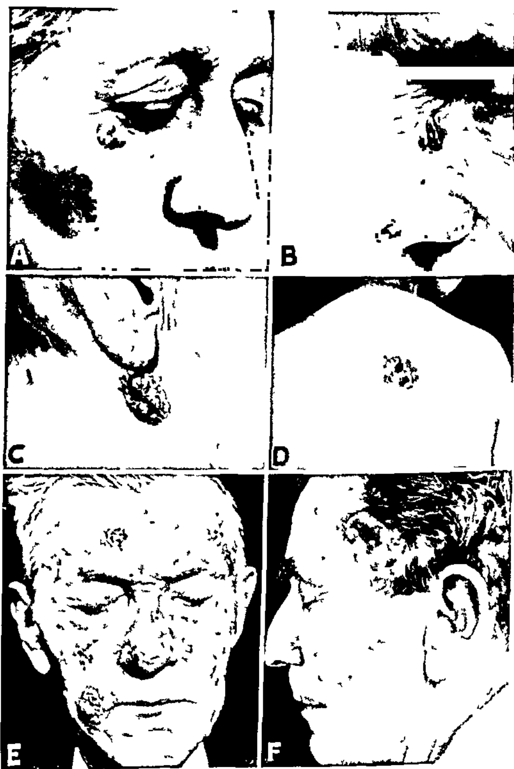



Plate 105

*Basal Cell Epithelioma* A nodule on the right lower eyelid treated by electrodesiccation and curettage with an excellent cosmetic result B in this location neglect will
will result x ray therapy was success
rficial variety the clinical appearance
icluding a basosquamous cell lesion of
the right cheek F fungating ulcer u e o e temple

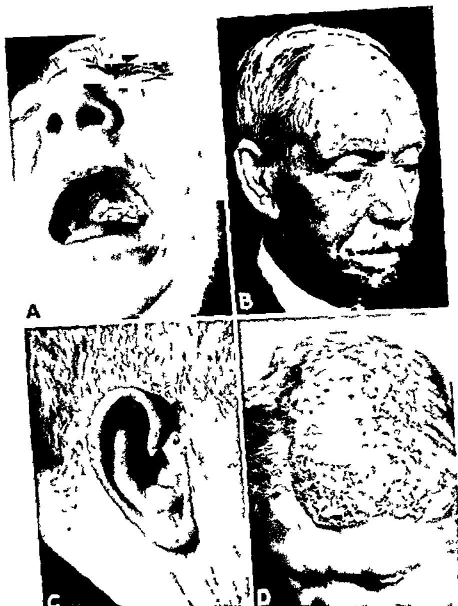



Plate 106

*Epithelioma* [illegible]

rangement The tumor mass may be solid or cystic, occasionally is pigmented and keratotic changes may be seen

**Differential Diagnosis.** As a rule the diagnosis may be readily made on inspection, from location of the lesion on the upper part of the face and from its typical features At times prickle cell epithelioma or melanoma may be simulated

**Treatment.** It is almost always advisable to do a biopsy to verify the clinical impression The specimen may be obtained with a cutaneous punch, after local injection of procaine If a small punch is used, it is not necessary to suture the wound Unless there is some doubt regarding clinical diagnosis, treatment is not necessarily postponed for the histological report The treatment consists in use either of electrodesiccation with curettage under procaine anesthesia or of roentgen irradiation Both modalities are best utilized by a dermatologist familiar with the technique *In some locations, surgical excision is preferable Although basal cell epithelioma* is the least malignant of all the cutaneous neoplasms, there may be considerable destruction of tissue if the case is neglected Anaplastic epi*thelioma is usually resistant to radiation Mohs has described* a method of chemosurgery in which the progress of treatment is determined histologically

## Prickle Cell Epithelioma

Known also as squamous cell carcinoma, this tumor (Plates 107, 108) *is locally invasive and may metastasize to internal organs, it is consequently* always dangerous

Symptoms It most commonly occurs on the lower lip This type of epithelioma is ***particularly to be feared when it appears on the tongue*** or on other parts of the mucous membranes No part of the body is exempt It may appear consecutively as a complication of a pre existing keratosis, ulceration, or other skin lesion For the most part the lesion develops *abruptly and increases in size rather rapidly There is little* tendency to ulceration until it is several millimeters in diameter Early in its development, ***infiltration of the lesion*** can often be determined by palpation The appearance varies considerably The lesion may be elevated above the surface of the skin, in which case it is sharply delineated, or the bulk of it may be below the level of the surrounding skin, when the ***extent of its invasion may be difficult to gauge*** even by careful palpation When it is fully developed, the central portion characteristically shows a crusted ulceration By this time there may already be internal metastases first to the regional lymph nodes but later to internal organs When the lesion is on the tongue or other mucous surface, particularly, a *prompt diagnosis is* necessary in order to save the patient's life *The same is true to a some*what lesser degree when prickle cell epithelioma occurs on the lower lip There *is possibly less tendency to early metastasis* when the lesion accompanies an atrophic or sclerotic skin disease, such as radiodermatitis If the lesion is large and the clinical diagnosis is in doubt, a small portion may




## Plate 107

*Prickle Cell Ep thel oma.* A the lower lip is a vulnerable location prompt and adequate therapy is essential B a button like les on w th some central necrosis C anaplastic epithelioma wh ch had infiltrated into and destroyed almost the entire nose D an ulcerative lesion on the arm of a young woman




Plate 108

*Prickle Cell Epithelioma* A ulcerative and locally invasive lesion no evidence of metastasis B rapidly developing tumor with fatal outcome from metastasis lesion was mistakenly treated as a manifestation of syphilis diagnosed on the basis of a serologic test C neglected deeply situated lesion with secondary pyogenic infection good response to x ray therapy but eventual metastases and fatal outcome D lesion in perianal region resembled tuberculosis

be removed for biopsy If the lesion is small the entire lesion should be excised for biopsy or treatment employed as otherwise described

Etiology Patients are usually middle aged or elderly Lesions involving the lower lip usually occur in men most of whom use tobacco in some form At times chronic irritation from a pipe or other agent is the direct cause Sunlight may be a factor in some cases Ingestion of arsenic

must also be considered In the mouth prickle cell epithelioma is frequently superimposed on a previous leukoplakia

**Pathology.** The tumor mass invades the dermis The nuclei are hyperchromatic and hyperplastic Numerous mitotic figures are seen Abnormal keratinization is suggested by whorls of keratin and horny pearls The adjacent dermis is usually heavily infiltrated with banal inflammatory cells

Differential Diagnosis The chief difficulty in the past has been to differentiate *syphilis* The primary lesion of syphilis develops much faster, it usually is seen in a young individual, a large satellite lymph node may be palpated, and dark field examination will reveal spirochetes There is much more chance of confusing a late lesion of syphilis, particularly a gumma One should be on guard against missing the diagnosis of cancer when a lesion on the skin or mucous membrane is observed in a patient who has a positive serologic test for syphilis It should be remembered that *syphilis and cancer may coexist* In all doubtful cases *the correct procedure is to take a biopsy*

Treatment Most of the tumors are radiosensitive, but for optimum results the dose of x rays or radium must be adequate In certain locations surgical excision is the preferred procedure, in other instances electrodesiccation is best, particularly if the lesion has not progressed beyond a few millimeters in diameter Before any treatment is begun there should be a careful examination for palpable lymph nodes along the channels draining the area If the lesion is of long duration a roentgenogram of the chest should be made to detect possible metastases The patient should be periodically followed after apparent cure for at least two years

## Keratoacanthoma

There is a close *resemblance* both clinically and histologically, to prickle cell epithelioma

Symptoms A characteristic is the rapid development of the tumor It may increase to 1 0 cm in diameter within three weeks The lesion is usually solitary is elevated and may ulcerate There is a tendency to self healing

Treatment A biopsy is required The *entire* lesion often is best removed by surgical excision or electrosurgery

## Bowen's Disease

*Bowen's* disease is a relatively benign form of cutaneous malignancy (Plate 109, F)

Symptoms A solitary tumor or multiple lesions may appear The lesion is dull red often is crusted *and* spreads by extension developing slowly On palpation the lesion is *determined* to be relatively superficial Any part of the skin or mucous membranes may be involved Metastasis is rare but may occur in neglected cases

Treatment The lesions should be destroyed by electrodesiccation *and* curettage under procaine anesthesia after a specimen is obtained for histologic study













Plate 108

*Prickle Cell Epithelioma* A ulcerative and locally invasive lesion no evidence of metastasis ... fatal osteoma from metastasis lesion as ... x ray therapy but eventual metastases ... resembled tuberculosis

be removed for biopsy If the lesion is small the entire lesion should be excised for biopsy or treatment employed as otherwise described

Etiology Patients are usually middle aged or elderly Lesions involving the lower lip usually occur in men most of whom use tobacco in some form At times chronic irritation from a pipe or other agent is the direct cause Sunlight may be a factor in some cases Ingestion of arsenic




Plate 109

Malignant Lesions A *recurrent carcinoma* of the breast with secondary invasion of the skin B metastatic lesions of skin secondary to carcinoma of the lung C fungating *prickle-cell epithelioma* arising in lesions of *acrodermatitis chronica atrophicans* D prickle-cell epithelioma secondary to an actinic keratosis E *Paget's disease* the skin lesions are suggestive of eczema but mask an intramammary carcinoma F *Bowen's disease* an uncommon and slow developing type of epithelioma

## Paget's Disease

Paget's disease is a type of mammary duct carcinoma which may readily be overlooked (Plate 109, E)

**Symptoms.** *Usually* only one nipple is involved, and at an early stage the appearance is that of contact eczema of the nipple The clinical features are *erythema, exudation, and the formation of crusts*

**Differential Diagnosis.** *Eczema of the nipple is usually bilateral Eczema should respond to removal of the* cause and application of soothing topical treatment Such therapy results in little or no response with Pagets disease *One should not wait for a palpable mass to be apparent.* In all cases of unilateral eczematization in the region of the nipple in which response to topical therapy is not prompt, a specimen should be taken for biopsy

**Treatment.** Once the diagnosis has been established, the only safe procedure is radical mastectomy

## Malignant Melanoma

Malignant *melanoma, or melanocarcinoma, known colloquially* as "the black death," is a highly malignant tumor (Plate 110)

**Symptoms** The lesion begins almost invariably as a junction nevus It may be macular or papular and is nearly always slate-blue to black in color In the so-called amelanotic melanoma, the lesion may be skin colored In all instances *the surface of the growth is smooth and non hairy* Most lesions have a tendency to grow actively only after the age of puberty They increase in size peripherally and in depth The full extent of the spread may not be detectable by ordinary inspection Eventually, superficial ulceration and crust formation appear By this time dissemination of the tumor by the blood stream or through lymphatic channels has almost surely occurred *Pregnancy stimulates the rate of growth and adds to the* poor prognosis

*Melanotic whitlow* is a form of melanoma arising in the nail bed, chiefly of the thumb or great toe Pain is usually absent At times the tumor is not pigmented and consequently recognition may be tardy The nail is usually shed (Plate 110, C)

**Pathology** Experience is needed in order to avoid errors in diagnosis Criteria for malignancy are as follows (1) invasion of the upper layers of the epidermis by nevus cells, (2) atypical giant multinucleated cells with increased mitoses and cuboidal shape, (3) increased melanin (usually but not always present), (4) invasion into the cutis (5) dense inflammatory infiltrate

**Differential Diagnosis** It is not always easy to be certain of the diagnosis of an early lesion *Thrombotic angioma, blue nevus,* and *pigmented basal cell epithelioma* all superficially resemble melanoma during this inactive or latent stage *Any smooth, acquired lesion which is increasing in size should come under suspicion*

**Treatment.** In all cases except when dissemination has occurred, it

is advisable to carry out wide and deep excision of the lesion It is doubtful if deforming operations and amputations have saved any lives and therefore ***justification of such radical procedures is debatable*** The patient should be carefully examined for ***satellite lymph nodes*** and for ***evidence of the disease in the lungs or elsewhere*** For the mortality of this highly malignant disease to be reduced early lesions must be recognized and extirpated before there is a chance for degeneration with resultant metastasis It should also be kept in mind that ***dissemination occurs rarely in childhood,*** so that removal of junction nevi before puberty tends to be a prophylactic procedure

## Multiple Hemorrhagic Sarcoma of Kaposi

Diagnosis of multiple hemorrhagic sarcoma of Kaposi (Plate 111) is usually made on the location and multiform type of lesions

Symptoms The initial lesion invariably develops on the foot and particularly on ***the great toe*** The affected skin becomes bluish or purplish in hue Nodules and infiltrated plaques become interspersed Telangiectasia is often noted After a variable period ulcerations occur The plaques often have a verrucous surface Other parts of the extremities the trunk the mucous membranes and finally the internal organs may become involved the gastrointestinal tract being the most vulnerable site The disease usually lasts several years

Pathology In the early stages the blood vessels are dilated and increased in number The endothelium is thickened and degenerated *A perivascular infiltrate* consists of lymphocytes and plasma cells Special stains usually *reveal* the presence of hemosiderin Later there is increased blood vessel formation and fibrosis

Differential Diagnosis Little difficulty will be experienced if the patient is carefully *examined* The location multiplicity and appearance of lesions rule out such diseases ***as stasis dermatitis*** or ***contact eczema***

Treatment The time honored therapy of choice is the administration of x rays which usually are *effective* at *least* temporarily Some patients have been kept alive for as long *as* twenty years Arsenic is sometimes prescribed but is not as popular as formerly

## Myxosarcoma

Myxosarcoma is a *rare condition* in which deep seated irregular tumefactions are observed (Plate 112 B) There is a tendency to formation of additional lesions with the gradual but steady increase in size and coalescence of those already formed The *course* may be over a period of many years

Treatment Surgical excision may be helpful particularly when the lesions interfere with the function of some part such as the hand

## Dermatofibrosarcoma Protuberans

Dermatofibrosar*coma* protuberans is a progressive proliferative fibrotic disorder of low malignancy (Plate 112 A)









Plate 110

" "

1 1 le with no recent
idly enlarging
C *melanotic*
pigmentation
amputation of toe is only acceptable treat
t with rapidly fatal outcome

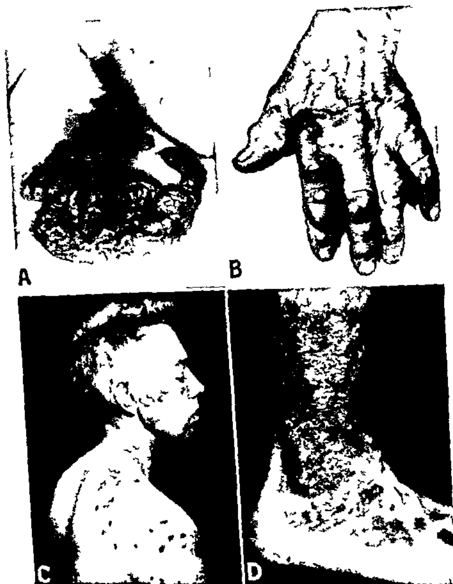


Plate 112

pseudoep theliomatous hyperplasia




Plate III

*Multiple Hemorrhagic Sarcoma of Kaposi* A early vascular lesions in typical location B diffuse and patchy hemorrhagic palpable eruption C lesions on forearm D tumor formation has occurred E ulcerations are frequent F large verrucous mass extending across abdomen hyperhidrosis in area was pronounced




Plate 113

[illegible]

sharp margins leaving normal skin may be noted

**Symptoms.** Several subcutaneous nodules enlarge and fuse to form a plaque, with continuous development of nodules which may project from the plaque. The condition tends to recur after excision, unless it is wide and deep. Metastasis occasionally occurs. *Lesions are most often seen on the abdominal wall but may occur elsewhere.*

**Treatment.** Surgical excision must be thorough.

## The Lymphoblastomas

*The term lymphoblastoma has come into common use to include not* only disorders of the hematopoietic system of lymphocytic origin but also those conditions in which myelocytes and monocytes are involved. The various forms of lymphoblastomas are as follows: (1) mycosis fungoides, (2) lymphosarcoma, (3) leukemia, and (4) Hodgkin's disease.

The skin may be affected in any of these diseases. In ***mycosis fungoides*** the skin is always the primary site and may be the only organ affected. *The same is less true for lymphosarcoma. In leukemia specific skin involvement is uncommon although it does occur. In **Hodgkin's disease** the skin is rarely actually invaded, although toxic manifestations, such as pruritus,* are common. Mycosis fungoides, the predominant lymphomatous disease of the skin, is considered here in some detail.

### Mycosis Fungoides

The clinical course of mycosis fungoides (Plates 113, 114) is distinguished by a premycotic eruption and later by the development of tumors.

**Symptoms.** ***The premycotic eruption varies considerably.*** In many instances it is a dry, scaly, patchy eruption and may simulate psoriasis or parapsoriasis. There is ***considerable itching,*** and suspicion may be aroused when there is difficulty in providing symptomatic relief or in influencing the rash by ordinary methods of treatment. A biopsy at this time may show the histologic picture of mycosis fungoides. After a variable time (several months or even years) ***infiltrated nodules or tumors*** appear. Lesions are often ***arciform or horseshoe-shaped, fairly soft,*** and ***dull red*** in color. The tumors ***eventually ulcerate.*** Palpable lymph nodes may be noted. Occasionally some of the internal organs become involved. Presence of this disorder apparently indicates vulnerability to other of the lymphoblastomas, and the patient ***may later develop evidence of leukemia*** or ***of lymphosarcoma*** and may die from one of these disorders. The diagnosis of mycosis fungoides should be kept in mind in the presence of a chronic dermatosis, particularly when the pruritus is severe and the response to therapy is poor. In the tumor stage the appearance is so typical that a positive clinical diagnosis is often possible.

**Etiology.** In common with other members of the lymphoblastoma group the cause of mycosis fungoides is unknown. It is a disease of middle age and affects men approximately twice as often as it does women.

**Pathology.** Acanthosis is often accompanied by micro-abscesses containing lymphocytes. The infiltrate, usually found in the upper cutis is

distinguished by the multiplicity of cell types These include lymphocytes polymorphonuclear leukocytes eosinophils plasma cells histiocytes etc

**Treatment** The diagnosis should always be verified by biopsy The treatment of choice is *roentgen irradiation* but decision as to when it should be administered and in what dose requires considerable judgment since patients may develop refractoriness after prolonged use If the disease is localized the x rays should be given semi intensively in the hope that the disease will be aborted Surprisingly small doses are often adequate to obtain remission and some patients have lived for twenty years and more The *cathode ray* has been found effective sometimes in cases no longer responsive to x rays The disease is ultimately fatal

Another form of therapy is administration of antimony and potassium tartrate (tartar emetic) This drug is temporarily effective in only one third or less of the patients but in favorable cases the response is dramatic The drug is administered intravenously in 1 per cent solution starting with 5 cc This should be repeated twice weekly If improvement occurs it will be seen by the second or third week of treatment The skin lesions are usually unresponsive to local measures except that antipruritic medications such as 0 5 per cent menthol in cold cream may give symptomatic relief

## Lymphosarcoma

The lesions of lymphosarcoma appear abruptly and develop rapidly

**Symptoms** The eruption may be *localized* to one area or be *disseminated* widely over the body The lesions are usually firm deep seated and dull red in color and develop rapidly As a rule there is little or no tendency to ulceration The lesions may remain discrete but tend to *coalesce*

**Differential Diagnosis** The lesions are sometimes simulated by *drug* eruption and other lymphoblastomas A biopsy should be performed

**Treatment.** X ray therapy is the best procedure Surprisingly small doses are effective in bringing about temporary involution of the lesions If the condition is of short duration intensive treatment is indicated in the hope of eradicating the process The prognosis must be reserved since internal organs may also be involved in the disease process

## Leukemia

During the course of all types of leukemia but particularly in chronic lymphatic leukemia specific *nodules and diffuse* infiltrations of the skin may occur (Plate 115)

**Symptoms** Resemblance to *lepromatous leprosy* is sometimes striking Occasionally in leukemia there is also seen a generalized or even universal *erythroderma* in which the skin is diffusely dull red infiltrated and scaly This eruption may precede by some months or even years the development of leukemic changes in the blood Many other types of [illegible] manifestations may be present [illegible]

*zoster purpura* and *erythe*[illegible]

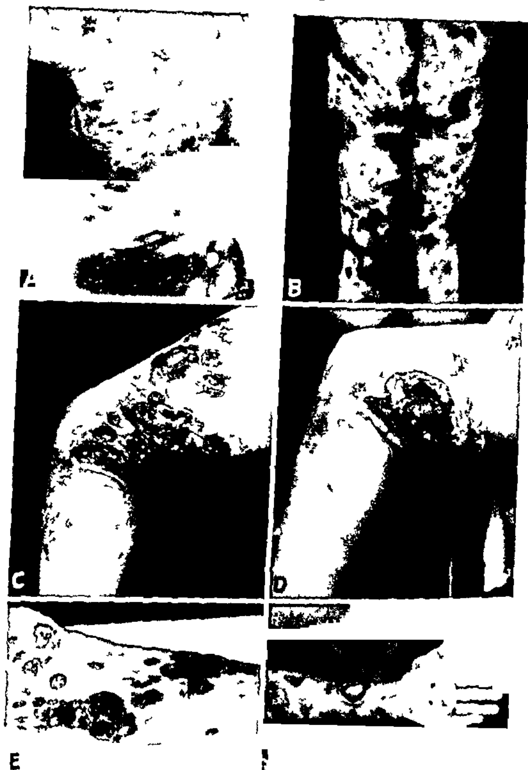



Plate 114

*Mycosis Fungoides (tumor stage)* A infiltrated deep seated dull red nodules and ... nodules and tumors C widespread ulcerative stage secondary pyo- ... to form large ... ited in ... aracter istic polymorphic eruption ranging from macules to ulceration and including papules nodules tumors and plaques

distinguished by the multiplicity of cell types These include lymphocytes polymorphonuclear leukocytes eosinophils plasma cells histiocytes etc

Treatment The diagnosis should always be verified by biopsy The treatment of choice is roentgen *irradiation*, but decision as to when it should be administered and in what dose requires considerable judgment since patients may develop refractoriness after prolonged use If the disease is localized the x rays should be given semi intensively in the hope that the disease will be aborted Surprisingly small doses are often adequate to obtain remission, and some patients have lived for twenty years and more The *cathode ray* has been found effective sometimes in cases no longer responsive to x rays The disease is ultimately fatal

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**Plate 115**

... occur the resemblance ... h hypertrophic gingi-
to le... lesions are often seen
vitis ... nsive, may occur ...
during ... secondary pyogenic and contact eczema in a patient debilitated by leukemia

*vesicular, pruritic eruptions*, presumably due to circulating toxins *Hypertrophic gingivitis* with bleeding may be an early symptom *Pyogenic infection* is frequent, particularly late in the course of the disease This may result in follicular pustules or furuncles or as impetiginous lesions Response to antibacterial agents is usually not satisfactory

Treatment Biopsy will confirm the diagnosis since the histologic findings are characteristic Skin lesions are nearly always responsive to roentgen irradiation Pruritus is sometimes difficult to control Various antipruritic remedies including the antihistamines should be tried Antibiotics are often indicated

## Hodgkin's Disease

Only a small percentage of patients with Hodgkin's disease present skin lesions

Symptoms The rashes occasionally observed are mostly nonspecific and papulovesicular and vary widely in their appearance True Hodgkin's infiltrations of the skin are rare

Treatment The underlying disease should be appropriately treated (usually with roentgen therapy) If the skin lesions are specific they will also react favorably to irradiation Nonspecific or toxic lesions and *pruritus* without skin manifestations are often difficult to control




Plate 115

the resemblance
hypertrophic gingi
ns are often seen
during the course of the disease E pyogenic infections often extensive may occur F secondary pyogenic and contact eczema in a patient debilitated by leukemia

*Cooperation of the patient is necessary to successful management.* The elegance of a prescribed medicament, regarding such factors as taste, odor, staining characteristics, color, etc, must be considered An effective medication which may be used only occasionally is less desirable than a less potent but more acceptable medicine which the patient will use regularly

The *intelligence of the patient* and the facilities available to him must also be evaluated Sometimes a compromise must be made Any regimen beyond the understanding of the patient or impossible because of limited facilities available to him is necessarily valueless

The *financial status of the patient* is to be considered, and at times a second choice regimen is preferable because of the exorbitant cost of a more potent drug, because of the necessity of frequent visits, or because the most effective regimen would preclude the patient's working at his normal occupation

Determination of the *general medical status* of the patient is of paramount importance in planning therapy, and the existence of a systemic condition such as hypertension, diabetes, hemorrhagic diathesis, kidney disease or an allergic tendency must be recognized as a possible contraindication to the use of certain drugs or procedures

Treatment of dermatologic disorders may be classified as (1) specific, (2) semi specific, (3) destructive, or (4) symptomatic and supportive

When an etiologic agent is known, and a *specific medication* against this agent is available, definitive treatment is easily accomplished Examples are the use of specific antibiotics in bacterial and rickettsial skin diseases, benzyl benzoate lotion in scabies, DDT in pediculosis, and BAL in acute gold and other heavy metal dermatoses Another form of specific therapy is removal of causative agents of dermatologic allergies Thus the elimination of a drug causing drug eruption or an allergen causing contact dermatitis often results in cure with a minimum of symptomatic treatment

In *semi-specific therapy,* the etiologic agent may be obscure or the exact mode of action of the medication unknown, but the effectiveness of such treatment has been shown by experience Examples of this are sulfapyridine in dermatitis herpetiformis, anti malarial drugs in chronic discoid lupus erythematosus combination of local application of coal tar products with ultraviolet irradiation in psoriasis, bismuth in verruca vulgaris, and antihistamine drugs in urticaria and to a lesser degree in other allergic dermatoses

*Destructive therapy* consists of physical removal or inactivation of a disease process or physical disorder which cannot be effectively treated by medical means In this category would be placed such procedures as surgical or radiation therapy of a malignant neoplasm of the skin, electrodesiccation of a verruca and refrigeration therapy for hemangioma

As [illegible] atologic conditions in whic [illegible] available In this type of [illegible] skill of the physician is paramount He must often direct his therapy against the physiologic, physical, and psychologic factors,

# Dermatologic Therapy

SUCCESS IN the treatment of dermatologic disorders depends on (1) ***accurate diagnosis***, and (2) an ***intelligent and integrated plan of attack*** on an individual basis, with careful selection from the available modalities. The various methods of therapy may be classified in the following categories

1 Topical medication
2 Systemic medication
3 Physical agents
   A Heliotherapy
   B Ionizing radiations
   C Surgical procedures, including electrosurgery
   D Refrigeration
4 Psychotherapy

Choice of therapy is a challenge to the skill and also a reflection of the experience of the physician. Sometimes an effective drug or procedure must be by-passed for one less effective. *The principle of calculated risk* must always be kept in mind: the percentage of mortality and morbidity attending use of a drug or procedure must be weighed against the probable beneficial effects. The availability of such potent and toxic drugs as ACTH and cortisone has emphasized this principle. ACTH is an effective agent in the treatment of pemphigus and sometimes in psoriasis. In pemphigus, a fatal disease, the risk is justified. However, in psoriasis, which is a chronic benign condition, the risk far outweighs the temporary effects to be expected, and the drug is contraindicated.

Another factor influencing choice of medication is *the danger of inducing sensitization* to a drug. As an example, penicillin ointment is effective in the treatment of impetigo. However, good judgment might dictate the use of neomycin or of ammoniated mercury ointment because of the danger of sensitizing the patient to penicillin and thus adding a complication to its use when it might be life-saving in the treatment of a serious disease such as pneumonia or septicemia.

plant, external chemical, etc ), ingested (food or drug), or endogenous (focus of infection or disordered physiologic process, such as internal new growth)

If the allergen cannot be removed, therapy consists of

1 *Specific Desensitization* Example staphylococcus toxoid desensitization for bacterids or rhus toxicodendron desensitization in poison ivy

2 *Nonspecific Desensitization* Injection of proteins such as milk, typhoid vaccine, etc

3 *Symptomatic Therapy* Use of agents such as the corticosteroids or the antihistamines to block the manifestations of the allergy

**H Diets** Regulation of diet is occasionally useful in dermatologic disorders

1 *Elimination Diets* Indicated in urticaria and eczema of the hands when food allergens are suspected

2 *Low-Fat, Low Cholesterol Diets* Useful in management of acne, xanthelasma, seborrheic dermatitis, and psoriasis

3 *Low Carbohydrate Diets* Indicated in monilial and staphylococcal infections

4 *Low Condiment, Low-Vasodilating Diet* No alcohol tea, coffee, or chocolate, indicated in rosacea

5 *High Protein Diet* Important in those dermatoses characterized by protein loss (dermatomyositis, systemic lupus erythematosus, pemphigus exfoliative dermatitis, etc )

## Physical Therapy

A Heliotherapy Light therapy has been used for many centuries in the form of exposure to sunlight More recently, the ultraviolet rays found in the sun have been reproduced mechanically and applied for specific purposes such as antibacterial action, production of erythema, action on synthesis of vitamin D, keratoplastic effect, development of pigmentation, and desquamation (peeling) Dosage units are physicobiological, based on time distance, and intensity needed for the production of erythema Physicians administering ultraviolet rays should be familiar with the indication for use and technique of administration, particularly keeping in mind that they are contraindicated in certain diseases, such as lupus erythematosus, xeroderma pigmentosum, and hydroa estivale

The two main types of ultraviolet lamps are

1 *Hot Quartz Lamp* Rays concentrated near 3000 Angstrom units, used for keratoplastic, pigment producing, erythema producing, and anti bacterial effects Used most commonly for psoriasis, seborrheic eczema, neurodermatitis, etc

2 *Cold Quartz Lamp* Rays concentrated in band near 2500 Angstrom units Used mainly for peeling effect in acne, verruca plana juvenilis, etc

**B Ionizing Radiations.** Ionizing radiations as produced by roentgen rays, radium, grenz rays, radon, thorium X or radioactive isotopes constitute one of the most effective methods of therapy in the practice of dermatology This form of therapy must be employed only by those who

in addition to the signs and symptoms of the dermatologic disorder The results are often excellent In this group would be placed a wide spectrum of diseases, including such conditions as atopic eczema, ichthyosis, erythema multiforme, and lichen planus

## Topical Medication

The dermatologist is often accused of being an externist Although this is untrue, it is nevertheless axiomatic that most skin diseases require local care

Some general principles may be stated ***The more acute and inflammatory the disease process, the milder the local medication to be used,*** conversely, ***the more chronic and non inflammatory the disease process, the stronger the concentration of local medication required.*** The vehicle carrying the drug is varied according to the physical characteristics of the agent (solubility, effectiveness, and stability in the particular vehicle) and to the morphologic characteristics of the dermatosis In acute inflammatory disorders with exudation, wet dressings, lotions, and pastes are used If the lesions are not exudative, emulsions (or liniments), paints, ointments, or plasters are used Listed below are the forms of topical therapy which are discussed in more detail in the following chapter on Dermatologic Formulary

A Wet dressings and baths
B Tinctures and solutions
C Powders
D Shake lotions and emulsions
E Pastes
F Ointments
G Destructive chemicals
H Plasters
I Cleansing agents
J Local injectables

## Systemic Medication

As with topical therapy, systemic medication may be specific, semi specific, symptomatic or supportive For practical purposes the various commonly used medications may be classified in the following categories

A. Antimicrobial agents
B Antihistamines
C. Heavy metals and related drugs
D Hormones
E Vitamins
F. Miscellaneous

The various preparations included in the foregoing six groups, with their dosage, specific precautions, etc, are listed in the following chapter on Dermatologic Formulary

**G. Antiallergic Therapy.** Such therapy aims first at the removal of the allergen, if possible Allergens may be environmental (pollen, dust,

plant, external chemical, etc ), ingested (food or drug), or endogenous (focus of infection or disordered physiologic process, such as internal new growth)

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C Surgical Procedures, Including Electrosurgery. Surgical procedures for the purpose of obtaining biopsy specimens or removing small tumors or cysts of the skin are an integral part of dermatologic practice The choice of the type of procedure depends on the pathologic type, size, configuration, and depth of the lesion and its anatomical position With malignant or potentially malignant lesions, the primary objective is to effect a cure If it is necessary to sacrifice the final cosmetic result to this end, it is justified However, in premalignant or malignant lesions, the cure rate is often the same by one of two or more different therapeutic methods In such cases use of the least destructive or deforming procedure is to the patient's advantage Most skin tumors are benign, and in the treatment of these lesions the emphasis is shifted toward the production of a favorable end result Incomplete or fractional treatment procedures entail no threat to the patient's health With lesions such as benign nevus, hemangioma, fibroma, and sebaceous cyst the patient has the right to expect that the end result will be cosmetically acceptable The dermatologist has the choice of "sharp" surgery, using a scalpel or cutaneous punch or electrosurgery, as well as non surgical methods "Sharp" surgery, in which the defect is closed by sutures has the advantages of rapid healing a linear scar, and the availability of all tissue removed for pathologic examination

*Dermabrasion* is a surgical technique to improve scarring The surface layers of the skin in scarred areas are removed by means of a hand rasp, sand paper or a motor driven wire brush or diamond fraise The epithelium is regenerated from cells of the dermal appendages

*Tattooing* is a method by which particles are forced into the skin by means of a power driven multiple spiked tool (Conway Dermajector) It is useful in implanting a pigment layer in the epidermis in port wine stain type of hemangiomata or in injecting a hydrocortisone suspension in localized neurodermatitis

*Chemosurgery* is a specialized technique originated by Mohs and is sometimes employed in the treatment of skin malignancies The procedure consists of chemical fixation (with zinc chloride paste) of the tissue suspected of being cancerous excision of a layer of fixed tissue, and systematic microscopic examination of the excised layer by means of frozen sections The process is repeated in the areas demonstrated to contain malignant tissue until a completely cancer free plane is reached

*Electrosurgery*, in which the wound is allowed to heal gradually by re epithelialization or formation of granulation tissue, has the advantages of simple technique, less danger of infection, no danger of dehiscence, and the production of a flat scar (particularly advantageous over weight bearing surfaces) After removal of superficial lesions by electrosurgery, re epithelialization without formation of scar tissue is often possible The following forms of electrosurgery are used

1 *Fulguration* This is a mono terminal technique with Oudin current (high voltage, low amperage) in which the active electrode is kept at

are specially trained to recognize the indications for its use, who understand the physiologic and physical effects produced, and who are aware of all the sequelae that may follow its use Ionizing radiations can produce unfortunate end-results if they are misused or administered carelessly by improperly trained or ignorant personnel ***Ionizing radiations should not be used as a substitute for adequate investigation of the skin disorder*** but rather to produce certain effects in a case in which the diagnosis is known and in which more specific therapy is not available In dermatologic practice, roentgen rays are almost exclusively used as a source of ionizing radiations because of the ease of administration, the accuracy with which dosage can be measured, and the relatively low cost The chief purposes for which ionizing radiations are used are

1 *Destruction of Malignancies* This results from the pronounced inhibition of metabolism in undifferentiated or neoplastic cells
*Examples* epitheliomas, mycosis fungoides, lymphoblastomas

2 *Effect on Benign New Growths and Granulomas* Radiation produces a differential effect on fibroblasts and angioblasts
*Examples* hemangiomas, keloids, granuloma annulare, and granulomas due to bacterial, viral, or fungus infections

3 *Inhibition of Activity of Sebaceous Glands* The sebaceous glands are more sensitive to ionizing radiations than the surrounding tissue
*Examples* acne, seborrhea etc

4 *Inhibition of Activity of Sweat Glands* The sweat glands are sensitive to ionizing radiations, but a much larger dose is necessary for their inhibition than for sebaceous glands so that great care must be taken in treating these structures in the rare instances in which this use is indicated
*Example* hidradenitis axillaris suppurativa

5 *Depilatory Effect* The dose of ionizing radiation causing temporary epilation is probably about 50 per cent of the dose which will produce permanent epilation This differential is utilized in the treatment of fungus infection of the hair in which local treatment is unsatisfactory
*Example* tinea capitis due to *Microsporum audouini*

Ionizing radiations should never be used to procure permanent epilation, as in hypertrichosis since the amount of x rays necessary to obtain permanent defluvium will be sufficient to produce other effects such as dryness, atrophy, telangiectasia, etc (see Radiodermatitis Chapter 19)

6 *Action against Infections* The mechanism of the effects of ionizing radiation on infectious processes is less well known They may produce the effects by acting on the infective agent itself, by inhibiting the granulomatous response of tissue to the infection or by increasing tissue resistance through breakdown of leukocytic blood cells
*Examples* furuncle, carbuncle herpes simplex herpes zoster verruca etc

7 *Antipruritic Effect* Since the mechanism of pruritus is unknown so also is the mechanism of suppression of pruritus by ionizing radiations
*Examples* pruritus ani et vulvae, localized neurodermatitis, etc

8 *Miscellaneous* Although the mechanism of their action is imper-

fectly understood ionizing radiations have been shown by experience to be effective in lichen planus, certain types of eczema, and psoriasis

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a short distance from the lesion and *superficial destruction is caused by the spark jumping to the tissue*

2 *Electrodesiccation* This procedure is similar to fulguration, except that the active electrode is inserted into the tissue before the current is turned on

3 *Electrocoagulation* This is a bi-terminal technique (active and indifferent electrodes) with d'Arsonval current (low voltage, high amperage), used usually as a "cutting" current

4 *Electrolysis* This procedure utilizes a battery capable of producing a continuous current of 0 5 to 2 0 milliamperes with an active electrode (negative pole) and indifferent electrode (positive pole) The patient holds the indifferent electrode, the active electrode, in the form of a needle, is inserted into the hair root or blood vessel being treated Destruction is probably accomplished by liberation of free hydrogen at the point of the active electrode Electrolysis is used chiefly for permanent destruction of hair follicles in hypertrichosis or ingrown hairs, but is also used to thrombose small telangiectatic blood vessels as found in nevus araneus, rosacea, or actinic sequelae

**D. Refrigeration.** The exposure of skin lesions to temperatures below zero produces destruction chiefly by the effect on the vascular elements of the tissue being treated Deep destruction by application of ***solid carbon dioxide*** or ***liquid nitrogen*** is used in the treatment of verrucae, keloids, granuloma annulare, and angiomas More superficial effects are produced by ***carbon dioxide "slush,"*** a mixture of powdered solid carbon dioxide and acetone This substance is frequently used in the treatment of rosacea, telangiectasia and scarring from acne

## Psychotherapy

The psychosomatic approach to certain dermatologic problems is becoming more and more helpful as the importance of emotional factors and their basic mechanisms are recognized In some instances (dermatitis factitia, neurotic excoriations, trichotillomania parasitophobia, etc ) the dermatologic lesions or complaints may be symptoms of an underlying psychiatric disorder In other conditions (dyshidrosis, hyperhidrosis, neurodermatitis, alopecia areata pruritus, etc ) emotional disorders sometimes play a prominent role In still other dermatologic conditions (acne vulgaris, argyria, syphilis leprosy paraffinoma, or any disfiguring process), the emotional impact incidental to the dermatologic problem may be tremendously important

The depth and type of psychotherapy administered in a given situation varies tremendously from one physician to another, dependent on his training in the recognition of psychosomatic components of the disorder and his mastery of basic psychotherapeutic methods

Treatment at the psychosomatic level sometimes can be attained simply by establishment of a firm doctor-patient relationship which assures the patient that he is not alone in the world and that a sympathetic person understands and is interested in his particular problem *Sympathetic listen-*

*ing, allowing the patient to ventilate his problems, is often an important part of the treatment.* On some occasions the physician must give the patient reassurance that his condition is treatable and not so serious as the patient himself has imagined This is particularly true in these days of cancer awareness, when it is common for a patient with a benign skin lesion to have an inner suspicion or conviction that it is malignant Reeducation and suggestion therapy are sometimes utilized but must be applied only in selected cases As a general rule, advice and direction to the patient to change his work, marital status, or residence are to be avoided without full psychiatric investigation of the patient

When therapy by a psychiatrist is indicated the dermatologist aids by instructing the patient regarding the scope and cost of psychiatric care and the possible therapeutic result to be expected Often it is difficult for the patient to gain sufficient insight into his problem to make psychiatric help acceptable, but psychosomatic therapy at the superficial level may be of assistance

a short distance from the lesion and superficial destruction is caused by the spark jumping to the tissue

2 *Electrodesiccation* This procedure is similar to fulguration, except that the active electrode is inserted into the tissue before the current is turned on

3 *Electrocoagulation* This is a bi terminal technique (active and indifferent electrodes) with d'Arsonval current (low voltage, high amperage), used usually as a "cutting" current

4 *Electrolysis* This procedure utilizes a battery capable of producing a continuous current of 0 5 to 2 0 milliamperes with an active electrode (negative pole) and indifferent electrode (positive pole) The patient holds the indifferent electrode, the active electrode, in the form of a needle, is inserted into the hair root or blood vessel being treated Destruction is probably accomplished by liberation of free hydrogen at the point of the active electrode Electrolysis is used chiefly for permanent destruction of hair follicles in hypertrichosis or ingrown hairs, but is also used to thrombose small telangiectatic blood vessels as found in nevus araneus, rosacea or actinic sequelae

**D Refrigeration** The exposure of skin lesions to temperatures below zero produces destruction chiefly by the effect on the vascular elements of the tissue being treated Deep destruction by application of *solid carbon dioxide or liquid nitrogen is used in the treatment of verrucae,* keloids granuloma annulare, and angiomas More superficial effects are produced by *carbon dioxide "slush,"* a mixture of powdered solid carbon dioxide and acetone This substance is frequently used in the treatment of rosacea telangiectasia and scarring from acne

## Psychotherapy

The psychosomatic approach to certain dermatologic problems is becoming more and more helpful as the importance of emotional factors and their basic mechanisms are recognized In some instances (*dermatitis factitia,* neurotic excoriations, trichotillomania parasitophobia etc ) the dermatologic lesions or complaints may be symptoms of an underlying psychiatric disorder In other conditions (dyshidrosis hyperhidrosis, neurodermatitis, alopecia areata pruritus, etc ) emotional disorders sometimes play a prominent role In still other dermatologic conditions (acne vulgaris argyria, syphilis, leprosy paraffinoma or any disfiguring process), the emotional impact incidental to the dermatologic problem may be tremendously important

The depth and type of psychotherapy administered in a given situation varies tremendously from one physician to another, dependent on his training in the recognition of psychosomatic components of the disorder and his mastery of basic psychotherapeutic methods

Treatment at the psychosomatic level sometimes can be attained simply by establishment of a firm doctor patient relationship which assures the patient that he is not alone in the world and that a sympathetic person understands and is interested in his particular problem *Sympathetic listen*

# Topical Medication

## A. Wet Dressings and Baths

Dressings may be wet with aqueous solutions or suspensions, applied directly to the skin, and maintained in moist form. Their use is indicated in exudative or highly inflammatory lesions.

The *wet dressing* combines application of medicaments with provision for drainage of exudate and may also be utilized for the application of heat or, conversely, for obtaining a cooling effect. Wet dressings may be open (without covering) or closed (with air tight covering made by applying wax paper, or plastic or rubber sheeting over the dressing). Closed wet dressings do not need frequent renewal as fluid is not lost by evaporation and heat is retained; such dressings, if applied for prolonged periods, cause maceration of the skin. For most skin disorders, the open method is preferable.

*Soothing Agents*

**Normal Saline Solution.** Nonmedicated and hypo-allergenic, used when drainage and heat are desired.

**Hypertonic Magnesium Sulfate Solution (25 per cent).** Used to reduce edema and inflammation as well as to provide drainage.

**Burow's Solution (1/20)** (aluminum acetate solution). Similar to boric acid solution but less bacteriostatic and more drying.

**Milk (4 parts) and Lime Water (1 part).** Usually used cold as soothing application about the eyes or genitalia.

*Bacteriostatic and Fungistatic Agents*

**Boric Acid Solution (2 per cent).** May be in water or in normal saline solution. Used in inflammatory, superficial infections.

**Potassium Permanganate Solution (1:10,000–1:50,000).** Similar to boric acid solution. The skin is stained brown.

**Silver Nitrate Solution (0.25–0.5 per cent).** Mildly bacteriostatic and fungistatic but also has an astringent effect.

***Baths*** act similarly to wet dressings, are frequently used when the dermatosis is extensive and offer the most efficient method of application of medication to exudative surfaces. Baths are also used frequently for their soothing or antipruritic properties. They may be given in a regular tub *(about 25 gallons)* as sitz baths when a dermatosis is limited to the perianal region (5–10 gallons) and as foot or arm baths when only an extremity is to be treated.

*Medicated Baths*

**Colloid Bath** (Linit* starch or Aveeno*) (½ lb. in 25 gallons). Soothing, antipruritic and least drying of the baths.

**Potassium Permanganate Bath** (25–50 grains to 25 gallons). Mildly antibacterial and antifungal. (Potassium permanganate crystals or

* Trade-mark

# Dermatologic Formulary

THIS FORMULARY includes some of the more common medications used in dermatologic therapy The drugs are grouped according to physical form and related therapeutic properties Common indications and precautions in their use are listed with the medications Unnecessary formulas and information not essential to therapeutic application are omitted Proprietary drug names are used when the medications are usually so prescribed, those mentioned do not necessarily represent the only available preparations of a drug but are those with which the author has had the most experience

Drug therapy may be utilized to influence a skin disorder by either (1) *local application* or (2) *systemic administration.* The subject will be further considered under the following headings

1. Topical Medication
   - A Wet dressings and baths
   - B Tinctures and solutions
   - C Powders
   - D Shake lotions and emulsions
   - E Pastes
   - F Ointments
   - G Destructive chemicals
   - H Plasters
   - I Cleansing agents
   - J Local injectables
2. Systemic Medication
   - A Antimicrobial agents
   - B Antihistamines
   - C Heavy metals and related drugs
   - D Hormones
   - E Vitamins
   - F Miscellaneous

*Other Preparations*

Podophyllum Resin Suspension 20-25 per cent in alcohol or compound tincture of benzoin Applied locally to venereal warts (condylomata acuminata)

Solution of Benzalkonium Chloride, U S P (Zephiran* Solution) 1 1000 for pre operative sterilization of skin 1 5000 to 1 20 000 for treatment of moniliasis of skin and mucous membranes

## C Powders

This form of medication can be easily applied to large areas Powders are efficacious in intertriginous areas because they form a film which lessens friction They have a cooling effect by increasing surface area for evaporation The disadvantages are that most medications cannot be applied in powder form and that having only a transient effect they must be applied frequently

| | |
|---|---|
| Cooling Antipruritic Powder | |
| Menthol | 0 25 |
| Purified talc to make | 100 0 |
| Mildly Antiseptic Powder | |
| Boric acid | 2 0 |
| Purified talc to make | 100 0 |
| Deodorant Powder | |
| Soda bicarbonate | 5 0-15 0 |
| Purified talc to make | 100 0 |

*Fungistatic Powders*

Desenex* (undecylenic acid)
Timofax* (undecylenic acid)
Sopronol* (propionic acid)
Asterol* (asterol dihydrochloride)

These powders are used in the prevention and treatment of dermatophytosis

*Pediculicidal Powder*

| | |
|---|---|
| DDT | 10 0 |
| Purified talc to make | *100 0* |

## D Shake Lotions and Emulsions

Lotions are aqueous suspensions of powdered solids which on evaporation of the water leave a thick *deposit of* powder on the surface of the skin Lotions may be applied to vesicular or slightly exudative surfaces They are applied most efficiently with a *paint brush* but the bare hand may be used in preference to absorbent cotton An emulsion is a combination of a lotion with an oil

*Soothing and Protective Preparations*

Calamine Lotion, U S P., or Neocalamine Lotion N.F Essentially a zinc oxide shake lotion Is protective and drying slightly hydrophilic Used also as base for other *medications*

* Trade mark

tablets should be dissolved in water in a basin, then poured into the drawn bath so as not to stain tub )

**Tar Bath** (solution of coal tar, N F , Zetar° emulsion, Almay° soluble tar) (½–2 ounces per tub) Used in psoriasis, seborrheic dermatitis, and chronic (atopic) eczema Has the added property of sensitizing skin to ultraviolet rays

## B. Tinctures and Solutions

Medications are frequently applied in the form of solutions (water base) or tinctures (alcohol or other solvent base) These differ from wet dressings in that the menstruum is allowed to evaporate and the medication is left deposited on the skin

*Bacteriostatic and Fungistatic Preparations*

**Gentian Violet Solution (1–2 per cent aqueous).** Bacteriostatic and fungistatic Particularly effective against *Candida albicans* Non irritating but stains

**Tincture of Iodine (2 per cent)** Similar to gentian violet but frequently irritates the skin, should not be bandaged

**Whitfield Lotion** Salicylic acid 2 per cent, benzoic acid 4 per cent in alcohol (70 per cent) Used in noninflammatory and uncomplicated cases of dermatophytosis

**Sopronol° Solution**

**Asterol° Tincture**

**Verdefam Solution°**—useful in onychomycosis

**Onychophytex°**—useful in onychomycosis

*Scalp Lotions*

*For Brunettes*

| | |
|---|---|
| Resorcin mono acetate | 1 5 |
| Salicylic acid | 2 0 |
| Ethyl alcohol (denatured) 50 per cent to make | 100 0 |

*For seborrheic dermatitis, Zetar° 1 per cent and castor oil 1–2 per cent may be added*

*For Blondes*

| | |
|---|---|
| Cantharides tincture | 1 0 |
| Mercury bichloride | 0 1 |
| Chloral hydrate | 2 0 |
| Betanaphthol | 1 0 |
| Ethyl alcohol (denatured) 50 per cent to make | 100 0 |

These scalp lotions are mildly antiseptic and stimulating The concentration of drugs may be increased and other drugs added, such as thymol 0 5 per cent, salicylic acid 2 per cent, and tincture of capsicum 6 per cent

readily washed off, so must be reapplied after bathing.

Skol* Has constituents similar to those of prescription above

*Poison Ivy Lotion*

Antivy* Contains zirconium

*Antipruritic Lotions*

Quotane* Lotion Low sensitization index
Caladryl* Medium sensitization index
Thephorin* Lotion Medium sensitization index
Hydrocortisone Lotion Most effective Low sensitization index Used in strengths of ½ to 2½ per cent alone or in combination with neomycin Vioform*, Sterosan*, or tars

## E. Pastes

Combination of an ointment with a powdered substance, which is usually hydrophilic

*Soothing Applications*

Zinc Oxide Paste, U.S.P. (Lassar's Plain Zinc Paste)

| | |
|---|---|
| Zinc oxide | 25.0 |
| Starch | 25.0 |
| White petrolatum | 100.0 |

Used for its soothing and hydrophilic properties also employed as a base for incorporation of active medicaments For instance 1 to 5 per cent of tar may be added for slightly exudative neurodermatitides, or zinc oxide paste may be mixed with Vioform* or bacitracin ointment in equal parts for secondarily infected eczematous dermatoses

Boric Acid-Zinc Oxide Paste

| | |
|---|---|
| Boric acid | 2.0 |
| Zinc oxide | 10.0 |
| Hydrophilic ointment U.S.P. | 100.0 |

Burow's Paste (Modified)

| | |
|---|---|
| Burow's solution | 17.0 |
| Hydrophilic ointment U.S.P. | 35.0 |
| Zinc oxide paste to make | 100.0 |

Similar to zinc oxide paste Hydrophilic properties of this paste may be increased by adding 5-10 per cent bentonite

Unna's Paste

| | |
|---|---|
| Zinc oxide | 15.0 |
| Gelatin | 15.0 |
| Glycerin | 35.0 |
| Water to make | 100.0 |

This protective and supportive preparation is useful for stasis eczema

*Astringent Preparations*

These may be made by addition of salicylic acid or resorcin (2 per cent or more) to Lassar's plain zinc paste

* Trade-mark

Calamine Lotion with Menthol 0 25 per cent and/or Phenol 0 5 per cent. Antipruritic

Calamine Lotion with Soluble Tars 1–5 per cent Useful in seborrheic eczema and subacute dermatoses

Calamine Emulsion. Equal parts of calamine lotion, U S P, with olive oil Less drying than calamine lotion

*Anti-seborrheic Preparations*

White Lotion, N.F. (Lotio Alba)

| | | |
|---|---|---|
| A | Zinc sulfate | 4 0 |
| | Distilled water to make | 100 0 |
| B | Sulfurated potash | 4 0 |
| | Distilled water to make | 100 0 |

Mix and filter A, then B Blend B into A This lotion must be prepared fresh and strengthened every few weeks for maximum effectiveness Widely used for acne, rosacea, and seborrheic dermatitis Applied at night and washed off in morning

Precaution mercury should not be added to this lotion or used in conjunction with it since mercury and sulfur are incompatible When mixed, mercuric sulfide is formed, which stains the skin

Kummerfeld Lotion. Sometimes used as a substitute for lotio alba

Sulfurated Lime Solution (Vleminckx' solution) A strong acne lotion, may also be used well diluted as a wet pack in deep seated pustular acne

AR EX* Sulfur and Resorcin Lotion

Dermasorcin*

Dermasul*

Sulforcin*

These proprietary acne lotions contain sulfur alone or with resorcin The effect is similar to that of white lotion, but these preparations are flesh colored to match the skin so can be used for daytime medication

Selsun* Suspension Used in seborrheic dermatitis of the scalp Is used after shampoo for five minutes Contains selenium which is toxic if taken systemically so care should be used

Sebizon* Lotion Useful in seborrheic dermatitis

*Antiparasitic Lotion*

Benzyl Benzoate Lotion, U S P Useful in scabies Apply for 2 or 3 consecutive nights Caution regarding sensitization

Eurax* Lotion Effective in scabies antipruritic

Kwell* Lotion Effective in scabies pediculosis and chigger infestations

*Sun Screen Lotions*

Tannic acid 5 per cent, and salol 1 per cent in equal parts of alcohol and water This should be applied before exposure to the sun It is

* Trade mark

readily washed off so must be reapplied after bathing
Skol* Has constituents similar to those of prescription above

*Poison Ivy Lotion*

Antivy* Contains zirconium

*Antipruritic Lotions*

Quotane* Lotion Low sensitization index
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Combination of an ointment with a powdered substance which is usually hydrophilic

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| Starch | 25 0 |
| White petrolatum | 100 0 |

Used for its soothing and hydrophilic properties also employed as a base for [illegible] per cent of t[illegible] or zinc oxid[illegible] ent in equal parts for secondarily infected eczematous dermatoses

Boric Acid–Zinc Oxide Paste

| | |
|---|---|
| Boric acid | 2 0 |
| Zinc oxide | 10 0 |
| Hydrophilic ointment U S P | 100 0 |

Burow's Paste (Modified)

| | |
|---|---|
| Burow's solution | 17 0 |
| Hydrophilic ointment U S P | 35 0 |
| Zinc oxide paste to make | 100 0 |

Similar to zinc oxide paste Hydrophilic properties of this paste may be increased by adding 5–10 per cent bentonite

Unna's Paste

| | |
|---|---|
| Zinc oxide | 15 0 |
| Gelatin | 15 0 |
| Glycerin | 35 0 |
| Water to make | 100 0 |

This protective and supportive preparation is useful for stasis eczema

*Astringent Preparations*

These may be made by addition of salicylic acid or resorcin (2 per cent or more) to Lassar's plain zinc paste

* Trade-mark

## F. Ointments

Ointments constitute the most widely used type of topical medication and a great variety of medicaments are employed in this form The type of base (greasy, non greasy, penetrating) is chosen to suit the nature of the lesion to be treated (wet, dry, oily, exudative, etc ), as well as to provide the best medium for the drug to be applied When a non-greasy or penetrating ointment base is used, in preference to a greasy base, lower percentages of active ingredients may be prescribed

*Ointment Bases*

**Petrolatum.** Greasy, hydrophobic

**Anhydrous Lanolin** High sensitization index is a disadvantage

**Rose Water Ointment, U.S P.** (*Unguentum aquae rosae*) Less greasy than petrolatum, non-absorptive

**Hydrophilic Ointment, U.S.P. XIV.** Washable, compatible with most medications, may be used on a somewhat exudative surface

**Aquaphor***

**Qualatum***

**Polysorb***

**Neobase***

**Solucreme***

These proprietary bases are similar to hydrophilic ointment, U S P

**Carbowax 1500*** A polymerized ethylene glycol which is completely washable and can be made to vary in consistency from solid to liquid by addition of varying amounts of water

*Soothing Ointments*

**Zinc Oxide Ointment**

**Boric Acid Ointment (2–5 per cent).** Mildly bacteriostatic and fungistatic Being acid it does not disturb the 'acid mantle" of the skin

**Zotox Cream** Contains zirconium which supposedly neutralizes oleo resin of poison ivy

*Antibacterial Ointments*

**Bacitracin Ointment** Effective against gram positive and gram-negative organisms Low sensitization index

***Tetracycline Ointment***

See under Neomycin Ointment

**Chloromycetin* Ointment**

See under Neomycin Ointment

**Neomycin Ointment**

Effective against gram negative and gram positive organisms Moderate to low sensitization index

**Ammoniated Mercury (2–6 per cent)** Particularly useful in chronic pyodermas

**Quinolor* Compound Ointment** Somewhat irritating but almost specific in its effect in most cases of sycosis vulgaris

* Trade-mark

*Antipruritic Ointments*

None of the following antipruritic preparations should be used on highly inflamed skin

Benzocaine (1 per cent) Ointment High sensitization index

Antihistamine Ointments (Benadryl* Pyribenzamine* Thephorin* etc ) Effective but have high index of sensitization

Phenol (0 5 per cent) and Menthol (0 25 per cent) Ointment Moderate sensitization index

Eurax* Ointment Low sensitization index

Quotane* Ointment Low sensitization index

Hydrocortisone ointment See under hydrocortisone lotions

*Antiscabetic Ointments*

Kwell* Ointment

Eurax* Ointment

*Keratoplastic Ointments*

Keratoplastic ointments are used in treatment of psoriasis seborrheic dermatitis and other dermatoses

Sulfur (3–10 per cent) and Salicylic Acid (2–5 per cent) Ointment Resorcin (2 per cent) and tars (1–5 per cent) may be added

Ammoniated Mercury (3–10 per cent) and Salicylic Acid (3–5 per cent) Ointment

Tar (1–10 per cent) Ointments A large number of tars are available including crude coal tar (pix carbonis) coal tar solution (liquor picis carbonis) juniper tar (pix juniperi oil of cade) and rectified birch tar oil (oleum rusci)

Anthralin* (0 1–1 per cent) Ointment The N F preparation is 1 per cent

Chrysarobin (1–10 per cent) Ointment Precautions This ointment stains and is very irritating to the eyes

*Sun-Screen Ointments*

| | |
|---|---|
| Para aminobenzoic acid | 4 5 |
| Hydrophilic ointment U S P to make | 30 0 |

Skolex* Cream

A Fil* and Neo-A Fil* Cream

See also sun screen lotions

*Depigmenting Ointment*

Benoquin* Results erratic Sensitivity index high

*Fungicidal Ointments*

Whitfield Ointment (benzoic and salicylic acid ointment) Usually applied first in one-fourth or half strength in chronic non-exudative dermatophytosis

Asterol* (Asterol dihydrochloride)

Desenex* (Undecylenic acid)

* Trade-mark

**Sopronol*** (Propionic acid)
**Timofax*** (Undecylenic acid)
These proprietary ointments have a low sensitization index
**Mycostatin* Ointment.** Effective in monilial infections

*Barrier Creams*

**Pro-Derna.** Contains silicone and protects against aqueous solutions of irritants

## G. Destructive Chemicals

**Silver Nitrate Solution (2–100 per cent).** Superficial destruction and eschar formation Stains black Useful to stop bleeding, coagulate exudative surfaces, or treat granuloma pyogenicum (Also used in solid form as a styptic pencil )
**Trichloracetic Acid (20–100 per cent)**
**Dichloracetic Acid (saturated)**
**Monochloracetic Acid (saturated)**
Destruction is deeper and reaction more pronounced as the number of chlorine atoms per molecule diminishes Useful in verruca, skin tabs seborrheic keratoses, and xanthelasma May be neutralized by application of moist sodium bicarbonate
**Phenol (50 to 90 per cent).** Neutralized by alcohol Coagulates protein, penetration of skin is moderate Used variously—alopecia areata of scalp, keratoses, etc
**Formaldehyde (1 to 10 per cent solution).** Sometimes used for hyperhidrosis

## H. Plasters

In addition to the well known commercial zinc oxide adhesive plasters used to hold dressings in place, several medicated plasters are available

*Keratolytic Plasters*

**Salicylic Acid Plaster (10 per cent)** A mild peeling agent for callosities, etc
**Salicylic Acid Plaster (40 per cent)** A more vigorous response will be obtained in therapy of warts, callosities, etc

*Protective Plasters*

**Moleskin Adhesive** Used in localized neurodermatitis dermatitis factitia, etc

## I. Cleansing Agents

*Soaps for General Cleansing Purposes*

*Household soaps such as castile, Ivory*, Dove* or Swan* are usually tolerated by the healthy individual*

*Soapless Detergents*

These preparations are used when soap is contraindicated

* Trade-mark

pHisoderm* (regular)
pHisoderm* (type for dry skin)
Acidolate*
Lowila* Cake
Lowila* Liquid

*Preparations for Dry Skin*

pHisoderm (type for dry skin)
Dermolate*
Basis Soap*
Oilatum* Soap
AR EX* Super Fatted Soap

*Preparations for Oily Skin (acne)*

pHisoderm* (type for oily skin)
Acne-Aid* Detergent Soap
Lava* Soap
Fostex* Cream or Cake

*Antiseptic Cleansing Agents*

pHisoHex*
Gamophen* Soap
Cleansing agents with hexachlorophene added Used for preoperative preparation of skin or to limit spread of infection (folliculitis impetigo etc )

*Preparations to Remove Crusts*

Hydrogen Peroxide (half to full strength) Apply liberally and repeat until material is softened and readily removed by cotton pledget
Boric Acid—Starch Poultice

| | |
|---|---|
| boric acid | 1 teaspoon |
| starch | 4 tablespoons |
| water (boiling) | 1 pint |

Mix the boric acid and starch with a little cold water to make a paste Add the boiling water and stir On cooling the jelly should be spread on a triple layer of gauze and covered with one layer the latter side being applied to the exudative crusted skin and left on for 30 minutes A soothing application useful when other measures fail

## J Local Injectables

Hydrocortisone Suspension (50 mg per cc )
*Indications* Used in synovial cysts and localized neurodermatitis (May also be introduced into skin by tattooing )

Hyaluronidase
*Indications* Keloids and localized chronic edematous conditions
*Dosage* 150 T R U in 1 cc sterile saline

* Trade-mark

Sopronol* (Propionic acid)
Timofax* (Undecylenic acid)
These proprietary ointments have a low sensitization index
*Mycostatin* Ointment.* Effective in monilial infections

*Barrier Creams*

Pro-Derna. Contains silicone and protects against aqueous solutions of irritants

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* Trade-mark

*Dosage* By mouth 0 5-2 grams every 4 or 5 hours
*Precautions* Side effects are few except for nausea occasional vomiting and diarrhea With prolonged use the patient, particularly if elderly, is susceptible to monilial infection of the mouth vagina and perianal region In such cases Mycostatin should be administered concomitantly

**Chloramphenicol (Chloromycetin*)**
See under Tetracycline Deaths from aplastic anemia following chloramphenicol therapy have been reported

**Streptomycin Sulfate (Dihydrostreptomycin Sulfate)**
*Indications* Infections with gram negative organisms, gram positive organisms not susceptible to penicillin and some tuberculodermas
*Dosage* 1 to 4 grams daily by intramuscular injection
*Precautions* Deafness due to auditory nerve involvement may follow large doses over prolonged period of time

**Erythromycin**
See under Tetracycline Particularly effective against staphylococci

**Novobiocin**
See under Erythromycin

**Oleandomycin**
See under Erythromycin

**Isoniazid**
*Indications* Tuberculous infections of the skin particularly lupus vulgaris
*Dosage* 50–100 mg three times daily

## B Antihistamines

*Indications* Symptomatic treatment of such conditions as urticaria contact dermatitis drug eruptions and neurodermatitis In some patients several different antihistamines may be tried before one effective for the individual is found It is well to start with one drug twice daily after meals gradually increasing the dose as necessary The antihistamines with frequent sedative side effects (Phenergan Benadryl Pyribenzamine) are best used at bedtime a drug without sedative side effects (such as Thephorin) is best taken after meals Two or more drugs may thus be prescribed for concurrent use

*Precautions* Side effects such as dryness of the mouth tingling fingers drowsiness dizziness headache insomnia diplopia gastritis diarrhea constipation urinary retention and changes in personality are among the reactions observed One or more of these reactions occur in about 20 per cent of patients are usually mild and are always reversible when medication is abandoned Another unrelated antihistamine may then be prescribed with the likelihood that it will be well tolerated

The more commonly used antihistamines and the oral doses (capsule tablet or elixir form) are as follows

| | |
|---|---|
| **Benadryl*** | 25 50 mg |
| **Chlor Trimeton*** | 4 8 mg repetab |
| **Histadyl*** | 50 mg |
| **Neo-Antergan*** | 25 50 mg |

# Systemic Medication

## A. Antimicrobial Agents

*Sulfonamides*

**Sulfadiazine**

*Indications* Gram-positive coccal infections Occasionally as sun sensitizing agent.

*Dosage* 1–2 grams initial dose 0 5–1 gram every 4–6 hours Double dosage of sodium bicarbonate and high fluid intake recommended

*Possible side-effects* Nausea, fever, dermatitis, agranulocytosis, kidney damage

**Gantrisin *** Soluble sulfonamide Indications and dosage identical to sulfadiazine No sodium bicarbonate necessary

**Kynex.*** Long acting soluble sulfonamide

*Dosage* 0 5 grams daily

**Sulfapyridine**

*Indication* Dermatitis herpetiformis

*Dosage* 0 5–2 grams daily in divided dosage, using minimum amount necessary to control symptoms

**Promacetin.*** Sulfonamide useful in Hansen's disease and dermatitis herpetiformis

*Dosage* 2 to 3 grams daily in divided doses

*Penicillin*

**Penicillin G Crystalline**

*Indications* Infections with gram positive microorganisms, anthrax, syphilis, Vincent's infection actinomycosis

*Dosage* 300,000–900,000 units per 24 hour period in divided doses at 3 or 4 hour intervals Usually administered intramuscularly but can be given intravenously by drip method, or by mouth

**Penicillin G Procaine**

Similar to crystalline penicillin but is longer acting, thus allowing interval of 24 hours between intramuscular injections

**Penicillin G Procaine with Aluminum Monostearate**

Similar to two previous preparations except that effect is further prolonged, allowing 48 hours between intramuscular injections

**Penicillin V** Oral form capable of producing high blood levels

*Dosage* 200,000 to 500,000 units every 4 to 6 hours

*Newer Antimicrobials*

**Tetracycline**

*Indications* Broad spectrum antibiotics effective against many gram-negative and gram positive organisms, rickettsia and spirochetes

* Trade mark

*Dosage* By mouth 0 5–2 grams every 4 or 5 hours
*Precautions* Side effects are few except for nausea occasional vomiting and diarrhea With prolonged use the patient, particularly if elderly is susceptible to monilial infection of the mouth vagina and perianal region In such cases Mycostatin should be administered concomitantly

Chloramphenicol (Chloromycetin*)
See under Tetracycline Deaths from aplastic anemia following chloramphenicol therapy have been reported

Streptomycin Sulfate (Dihydrostreptomycin Sulfate)
*Indications* Infections with gram negative organisms gram positive organisms not susceptible to penicillin and some tuberculodermas
*Dosage* 1 to 4 grams daily by intramuscular injection
*Precautions* Deafness due to auditory nerve involvement may follow large doses over prolonged period of time

Erythromycin
See under Tetracycline Particularly effective against staphylococci

Novobiocin
See under Erythromycin

Oleandomycin
See under Erythromycin

Isoniazid
*Indications* Tuberculous infections of the skin particularly lupus vulgaris
*Dosage* 50–100 mg three times daily

## B Antihistamines

*Indications* Symptomatic treatment of such conditions as urticaria contact dermatitis drug eruptions and neurodermatitis In some patients several different antihistamines may be tried before one effective for the individual is found It is well to start with one drug twice daily after meals gradually increasing the dose as necessary The antihistamines with frequent sedative side effects (Phenergan Benadryl Pyribenzamine) are best used at bedtime a drug without sedative side effects (such as Thephorin) is best taken after meals Two or more drugs may thus be prescribed for concurrent use

*Precautions* Side effects such as dryness of the mouth tingling fingers drowsiness dizziness headache insomnia diplopia gastritis diarrhea constipation urinary retention and changes in personality are among the reactions observed One or more of these reactions occur in about 20 per cent of patients are usually mild and are always reversible when medication is abandoned Another unrelated antihistamine may then be prescribed with the likelihood that it will be well tolerated

The more commonly used antihistamines and the oral doses (capsule tablet or elixir form) are as follows

| | |
|---|---|
| Benadryl* | 25 50 mg |
| Chlor Trimeton* | 4 8 mg repetab |
| Histadyl* | 50 mg |
| Neo-Antergan* | 25 50 mg |
| Neohetramine* | 25 50 mg |

# Systemic Medication

## A. Antimicrobial Agents

*Sulfonamides*

**Sulfadiazine**

*Indications* Gram positive coccal infections Occasionally as sun sensitizing agent

*Dosage* 1–2 grams initial dose 0 5–1 gram every 4–6 hours Double dosage of sodium bicarbonate and high fluid intake recommended

*Possible side effects* Nausea, fever, dermatitis, agranulocytosis kidney damage

**Gantrisin.*** Soluble sulfonamide Indications and dosage identical to sulfadiazine No sodium bicarbonate necessary

**Kynex.*** Long acting soluble sulfonamide

*Dosage* 0 5 grams daily

**Sulfapyridine**

*Indication* Dermatitis herpetiformis

*Dosage* 0 5–2 grams daily in divided dosage, using minimum amount necessary to control symptoms

**Promacetin*** Sulfonamide useful in Hansen's disease and dermatitis herpetiformis

*Dosage* 2 to 3 grams daily in divided doses

*Penicillin*

**Penicillin G Crystalline**

*Indications* Infections with gram positive microorganisms anthrax syphilis, Vincent's infection, actinomycosis

*Dosage* 300,000–900,000 units per 24 hour period in divided doses at 3 or 4 hour intervals Usually administered intramuscularly but can be given intravenously by drip method or by mouth

**Penicillin G Procaine**

Similar to crystalline penicillin but is longer acting thus allowing interval of 24 hours between intramuscular injections

**Penicillin G Procaine with Aluminum Monostearate**

Similar to two previous preparations except that effect is further prolonged, allowing 48 hours between intramuscular injections

**Penicillin V** Oral form capable of producing high blood levels

*Dosage* 200,000 to 500 000 units every 4 to 6 hours

*Newer Antimicrobials*

**Tetracycline**

*Indications* Broad spectrum antibiotics effective against many gram negative and gram positive organisms rickettsia and spirochetes

* Trade-mark

Table 7. Increment in Dosage in Prescribing in Drop Form a Saturated Aqueous Solution of Potassium Iodide

| Day | Breakfast | Lunch | Dinner | Total |
|---|---|---|---|---|
| S | 5 | 5 | 6 | 16 |
| M | 6 | 6 | 7 | 19 |
| T | 7 | 7 | 8 | 22 |
| W | 8 | 8 | 9 | 25 |
| T | 9 | 9 | 10 | 28 |
| F | 10 | 10 | 11 | 31 |
| S | 11 | 11 | 12 | 34 |

gastrointestinal disturbances, disturbed electrolyte balance Chronic sequelae include arsenical pigmentation, keratoses, and subsequent epitheliomas Arsenic is used much less frequently now than it was formerly

Carbarsone* (A pentavalent organic arsenical)

*Indications* Amebiasis cutis, dermatitis herpetiformis, pemphigus

*Dosage* 0 25 gram orally, two or three times daily for 3 to 10 days Course may be repeated several times after an interval equal to period of medication

*Precautions* Contraindicated when liver or kidney damage is present Injury to optic nerve is possible

*Detoxifying Agent*

BAL (British Anti Lewisite)

*Indication* Heavy metal poisoning (gold, mercury, arsenic)

*Dosage* 2 5–3 0 mg per kg of body weight intramuscularly every 4 hours for the first 48 hours, every 6 hours for the next 24 hours, then every 12 hours for ten days or until recovery

*Side-effects* Toxic drug Side-effects include nausea, vomiting, headache, paresthesias of face or extremities, sense of constriction of chest

## D. Hormones

ACTH

*Indications* Pemphigus, systemic (disseminated) lupus erythematosus, dermatomyositis severe erythema multiforme bullosum and drug eruptions (occasionally)

*Dosage* Aqueous solution, 10–25 mg intramuscularly four times daily When maximum therapeutic effect has been obtained, dosage and frequency are gradually decreased until maintenance dose is established

ACTHAR gel* is a repository preparation allowing intramuscular administration once daily or every other day

*Precautions* Potent and dangerous drug Initial hospitalization and complete medical evaluation strongly recommended Side-effects include electrolyte disturbance, fluid retention, psychosis, cardiac dis-

* Trade-mark

| | |
|---|---|
| Perazil* | 50 mg |
| Phenergan* | 12 5, 25 mg |
| Pyribenzamine* | 25, 50 mg (100 mg lontab) |
| Tagathen* | 25 mg |
| Thenfadil* | 15, 30 mg |
| Thephorin* | 25 mg |
| Temaril* | 2 5 mg |

Some of the above antihistamines (Chlor-Trimeton, Benadryl, Histadyl, Pyribenzamine) are available in a form for intravenous or intramuscular injection Dosages are roughly one half of the oral dose

Benadryl, Histadyl and Pyribenzamine are also available in a slow absorption form Chlor-Trimeton and Pyribenzamine are available in long acting forms

## C. Heavy Metals and Related Drugs

*Soluble Bismuth Compounds*

**Bismuth Subsalicylate**

*Indications* Lichen planus, discoid lupus erythematosus, multiple verrucae, syphilis

*Dosage* 1–2 cc intramuscularly each week for 7–12 weeks

*Precautions* Urine should be checked for albumin frequently and gum margins checked for bismuth line each week

**Bistrimate***

*Indications* and *precautions* as in bismuth subsalicylate

*Dosage* Administered orally 75–150 mg three times daily Frequently causes nausea and vomiting

**Potassium Iodide Solution (Saturated)**

*Indications* Tertiary syphilis (gummas), systemic moniliasis, and deep fungus infections (particularly sporotrichosis)

*Dosage* Initial dosage 5 drops, three times daily after meals with water or milk Increase by three drops daily until signs of intolerance develop, then reduce dose to asymptomatic level and continue for several weeks or months Often 200 to 300 drops daily are necessary

*Precautions* Signs of intolerance are increased salivation, burning sensation of the mouth, headache, gastric disturbance The most common side effect is an iododerma"

*Arsenic*

**Potassium Arsenite Solution (Fowler)**

*Indications* Lichen planus, psoriasis dermatitis herpetiformis

*Dosage* One drop three times daily after meals for one week Increase the dose one drop each week, and stop entirely after five weeks If the desired effect is not obtained at the end of five weeks, a different remedy should be tried Note on prescription that it is not to be refilled

*Precautions* Toxic agent Acute side effects include periorbital edema,

* Trade mark

females dosage is lower and cyclic administration is usually 21 days medication with 7–10 days rest period each month
*Indications* (1) A female patient and (2) acne vulgaris rosacea keratoderma kraurosis vulvae and senile pruritus
*Side effects* Feminization in the male menorrhagia dysmenorrhea interruption of periodicity of menses in the female
**Diethylstilbestrol**
*Dosage* 0 1–5 mg daily in same cyclic schedule as natural estrogens
*Side effects* Particularly nausea and vomiting much higher than with natural estrogens

*Pituitary Hormone*

**Chorionic Gonadotropic Hormone**
*Indications* Useful in adjunctive treatment of polymorphic light eruptions
*Dosage* 500 I U daily

## E Vitamins

**Vitamin A**
*Indication* (1) A dry skin or (2) a disorder of the pilosebaceous apparatus (ichthyosis phrynoderma Darier s disease acne vulgaris, etc )
*Dosage* 50 000 to 150 000 units daily by mouth
**Aquasol A***
**Aquasynth A***
Water soluble preparations of Vitamin A

*Vitamin B*

**Vitamin B Complex**
*Indications* Vitamin B deficiency diseases moniliasis and those diseases characterized by faulty lipid (cholesterol) *metabolism or seborrheic* components (seborrhea acne rosacea *psoriasis etc )*
*Dosage* By mouth 1 to 6 capsules daily
**Liver Crude (2 U S P units per cc )**
*Indications* Similar to those for Vitamin B *complex Also* used empirically in chronic discoid lupus erythematosus and *chronic exfoliative eczemas*
*Dosage* 1 cc intramuscularly 1 to 2 times a week
**Vitamin D (Calciferol)**
*Indications* Tuberculodermas *such as* lupus vulgaris parapsoriasis
Dosage 50 000 to 150 000 U S P units daily by *mouth*
*Side effects* Nausea vomiting headache kidney damage Calcium and potassium levels should be checked *frequently*
**Vitamin E (Mixed tocopherols)**
*Indications* Lupus erythematosus scleroderma
*Dosage* 100 to 200 mg three times daily by mouth combined with 200 to 400 mg weekly by intramuscular route

* Trade mark

turbance, and Cushing's syndrome Potassium and sodium blood levels should be checked frequently Prophylactic dose of 0 5–3 grams of potassium salts daily (according to dosage of ACTH) is advisable

*Contraindications* Cushing's syndrome, hypertension, psychosis, diabetes mellitus, chronic cardiac or kidney disease

***Cortisone (Cortone*)***

*Indications*, precautions, and contraindications similar to those of ACTH

*Dosage* Many different schedules have been evolved The following are two of the most widely used

1 (Usual) 50–100 mg daily until maximum therapeutic effect is reached, then gradual diminution to maintenance dose

2 (Rapid, intermittent) 200–300 mg daily for 7–10 days, then abrupt withdrawal Course may be repeated after rest interval

Dosages intramuscularly and orally seem comparable Intramuscular dose given daily, oral dose divided into four equal portions daily

**Hydrocortisone.** See Cortisone

**Prednisone** *See* Cortisone

*Dosage* 1/[illegible] to 1/5 that of Cortisone

**Prednisolone.** See *Prednisone*

***Methylprednisolone.*** *See Prednisone*

**Triamcinolone.** *See* Cortisone

*Dosage* 1/4 to 1/[illegible], that of Cortisone No sodium retention

**Thyroid**

*Indications* Specifically in myxedema and empirically in acne, nail and hair dystrophies, and chronic dermatoses Basal metabolic rate should be determined except when minimal dose is prescribed

*Dosage* 0 03–0 24 grams daily

*Side-effects* Tachycardia palpitation tremor nervousness

## *Androgens*

***Testosterone Propionate***

*Indications* Senile pruritus in the male and those dermatoses characterized by wasting or a negative nitrogen balance (pemphigus dermatomyositis, systemic lupus erythematosus)

*Dosage* 5–25 mg intramuscularly every 2 or 3 days

**Methyltestosterone** (for oral mucosal absorption)

*Indications* similar to testosterone propionate

*Dosage* 15–25 mg daily

## *Estrogens*

**Conjugated Estrogens Equine (Premarin*)**

*Dosage* Varies tremendously with age and physical condition of patient *In young females (ages 13–35) treatment* should be cyclic, 0 625 to 6 0 mg daily for 14 days before the expected menses In menopausal

* Trade mark

*Tranquilizers*

So many agents have been introduced in this category that no attempt will be made to list them Those that have been used widely by dermatologists to control psychoneurotic symptoms include Thorazine* rauwolfia compounds (Serpasil*) and meprobamate (Miltown* and Equanil*)

* Trade-mark

## F. Miscellaneous

*Antimalarials*

Aralen* (chloroquine)

*Indications* Lupus erythematosus, discoid or subacute types, or light sensitivity dermatoses

*Dosage* 125 to 250 mg daily Maintenance dose 125 mg every 2 to 7 days

*Side effects* Headache, gastrointestinal complaints, leucopenia

Atabrine.* See Aralen More toxic than Aralen Yellowish discoloration of skin frequent

*Dosage* 100 to 300 mg daily

Plaquenil.* See Aralen Less toxic than Aralen

*Dosage* 200 to 600 mg daily

Camoquin * Similar to Aralen

A. P. A. (Triquin).* Combination of Atabrine, Plaquenil, and Aralen

*Psoralins (8 methoxypsoralen)*

*Indications* Of reported value in vitiligo Promotes tanning of skin

*Dosage* 10 to 20 mg daily, administered by mouth 2 hours before exposure to gradually increasing doses of sunlight

*Precaution* Sun tolerance diminished Severe reactions reported

*Penicillinase*

*Indications* Severe penicillin reactions

*Dosage* 800,000 units (1 cc ) intramuscularly May be repeated 4 to 5 days later

*Side-effects* Pain and swelling at site of injection, fever A protein and can cause allergic reactions Penicillin protection is lost

*Immune globulin (Gamma Globulin*)*

*Indications* Herpes simplex, aphthous stomatitis infections slow to respond to antibiotics

*Hydrochloric Acid*

Acidol Pepsin*

*Indications* Rosacea

*Dosage* 1 capsule after each meal

Acidulin*

Similar to Acidol-Pepsin without the pepsin

*Anticholinergic Drugs*

Banthine*

*Indication* Hyperhidrosis dyshidrosis

*Dosage* 50 mg t i d after meals

*Side effects* Blurred vision, dry mouth, relaxation of the bladder

Pro Banthine.* Similar to Banthine, but used in lower dosage 15 mg t i d

* Trade-mark




**Plate 116**

*Herpes Simplex Virus in human liver tissue* Cultures 48 hours after inoculation The virus is not visualized Its recognition depends on cytopathogenic features A areas of destruction are evident B ballooning is prominent

*Chapter 26*

# Basic Sciences in Dermatology

SOME SCIENTIFIC fields assist in diagnosis, some are of aid in treatment and all are helpful in understanding more clearly the nature of skin disorders This chapter intends to outline a few facts and, perhaps, to stimulate thereby the interest of the reader Practical work in these areas is important Such subjects as allergy, endocrinology, physical therapy, radiology, pharmacology surgery, bacteriology, embryology, and animal parasitology are not included in the discussion But this does not indicate a lack of appreciation of their importance, without a thorough grounding in these fields, one cannot hope to understand nor to treat diseases of the skin in an adequate manner Furthermore, of the sciences selected, only limited comments are possible

## 1. Virology

***Tissue cultures*** are now being utilized, not only in the investigation, but also in the diagnosis of virus disease Certain respiratory viruses not previously cultivable have developed growths on tissue culture, indicating that this method may also prove useful in isolating new skin viruses

When facilities for processing tissue cultures are available, the cytopathogenic effect and the wide tissue spectrum of the herpes simplex virus allow easy differentiation from herpes zoster and eczema vaccinatum (vaccinia virus) In the past this problem of differential diagnosis was often difficult, frequently dependent on circumstantial evidence

Recently the viruses of measles, varicella and herpes zoster have also been grown in tissue culture This development promises early clinical returns in that a measles vaccine is now conceivable and indeed in process of development Further the long suspected close relationship between varicella and herpes zoster is now supported by cultural and immunologic characteristics, demonstrated from the utilization of tissue cultures Recent reports confirm what has been strongly suspected—that the two diseases are manifestations of an identical virus




**Plate 116**

*Herpes Simplex Virus in human liver tissue* Cultures 48 hours after inoculation The virus is not visualized Its recognition depends on cytopathogenic features A areas of destruction are evident B ballooning is prominent

# 2. Anatomy

It is possible to divide the skin into four major parts the *epidermis*, the *epidermal appendages*, the *dermis* and the *subcutis*. The characteristics of each of these will be briefly summarized

## A. Epidermis

The thickness of the epidermis varies according to location from about 06 mm in the eyelids to 0 8 mm in the palms and soles There are four layers, with the exception of the palms and soles where an additional layer (stratum lucidum) is present

The order of discussion of the layers is from proximal to distal

**Stratum Germinativum (basal layer).** Basal cells are columnar and contain prickles Clear cells are scattered through the basal layer They have dark staining nuclei and a clear cytoplasm When melanin deposits are present, the (basal) cells are referred to as *melanoblasts* (melanin forming cells) These cells are believed to derive their origin from the neural crest and stain positive with Dopa

**Stratum Malpighii (prickle layer).** These cells are polygonal and appear to be joined by prickles The cells are capable of mitotic activity The separation of the cells by intercellular spaces allows nutrient material to circulate freely around the cells This fluid originates from the blood vessels of the corium

**Stratum Granulosum** The granular cells are diamond shaped and filled with granules (keratohyalin) The granules stain intensely basophilic, they are missing in areas of parakeratosis Prickles are not apparent

**Stratum Lucidum** This layer may only be visualized in skin from the palms and soles It appears translucent, stains pink and nuclei are absent

**Stratum Corneum** The horny cells are devoid of nuclei and are usually closely packed

## B. The Epidermal Appendages

**Eccrine Sweat Glands** These glands are present in all regions of the human skin They are more numerous in the skin of the palms, soles and axillae The secretory portion lies coiled at the junction of the lower cutis and the subcutis The wall of each coil is made up of a single layer of cuboidal cells The outer layer consists of myoepithelial cells which lie on the basement membrane The ductal portion of the sweat glands empties into the epidermis and consists of two layers of cuboidal cells

**Apocrine Sweat Glands.** The apocrine glands originate from the primary epithelium germ and empty into the pilosebaceous follicles Apocrine glands are located chiefly in the axillae nipples, perigenital and perianal areas The lumen is much larger (200 microns) in diameter than the eccrine sweat glands (20 microns) In the secretory portion there are two layers of cells the inner secretory and outer myoepithelial cells The cells undergo a cycle of secreting stages They are low cuboid in the beginning of the cycle, gradually increase in height, and eventually part of the cytoplasm is

pushed off as "decapitation secretion" The duct is lined by two layers of epithelial cells which stain slightly eosinophilic

**Sebaceous Glands** Sebaceous glands are found in all skin areas except the palms and soles The gland is lined by stratified squamous epithelium

The sebaceous glands are classified as ***holocrine.*** This means that secretion is furnished by desquamation of whole cells into the duct Each gland consists of several lobules The cells have a delicate network of lacy cytoplasm which is filled with fat Each cell is about 50 to 60 microns in diameter

**The Pilary System** The hairs are dead structures composed of keratinized cells They grow out of the downward invaginations of the epidermis known as the hair follicles Hair follicles are slanted and grow down to the level of the fat The hair follicles and the sebaceous glands which grow from their *sides* comprise the pilosebaceous system

Hair follicles are either growing or resting Approximately 90 per cent of the follicles are growing Growing follicles are usually longer and they contain an internal root sheath (consisting of Henle's layer, Huxley's layer and the cuticle) The internal root sheath is eliminated in the pilosebaceous canal When follicles are in the resting stage, they are shorter, there is no internal root sheath, and they fall out easily

Hairs are composed of ***cuticle*** on the outside, a ***cortex*** in the middle, and a ***medulla*** in the center

The ***papilla*** is a connective tissue structure which is enclosed by the bulb of the growth follicle During growth stages the papilla stains metachromatically, is Schiff reactive and contains alkaline phosphatase

## C. The Dermis (Cutis, Corium)

The dermis consists of a thin, superficial and delicate ***papillary layer*** and a thick deep ***reticular layer*** The papillary layer is not pierced by the cutaneous appendages but forms a continuous sleeve over each of them. The upper surface of the papillary layer bears the negative imprint of the underside of the epidermis and forms ridges, valleys, and papillae

***Collagen*** occurs in bundles of fibers held together or separated by the semifluid ground substance *Scattered fibroblasts* are present and are more numerous in younger collagen In senile changes, the fibroblasts are infrequently seen

***Reticular fibers*** are probably *"precollagenous"* [illegible]

[illegible] are in-

[illegible] pathological conditions such as granulomas and tumors

**Elastic fibers** are coarse *branching* cylindrical or flat ribbons entwined among the collagenous fibers They are thickest in the lower cutis Actually they are rigid and return the skin *into position* [illegible]

[illegible]

[illegible] encapsulated endings

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Plate 117

[illegible]

bulla)

(Meissner corpuscles Krause end bulbs and Pacinian corpuscles) Exact function of the different types of nerve endings is poorly understood

### D Subcutis

This layer is composed chiefly of fat tissue Its size varies considerably in different parts of the body in different individuals and at various ages It affords protection conserves heat and is a food reservoir for the body The blood vessels are larger than in the dermis The sweat glands are located in the more superficial portion

## 3 Pathology

The information that follows summarizes some of the more important general aspects of this science as it relates to the skin The pathology of the individual diseases is discussed *in brief in conjunction* with the other phases of the various disorders While one thinks of pathology chiefly in connection with its assistance in arriving at a precise diagnosis the knowledge gained *by studying histologic slides helps one to a fuller understanding* of the disease process A serious student will gain greatly by practical work in the subject

### Basic Pathologic Processes

Some of the more common changes in the skin that can be recognized as abnormal when *microscopically examined will now be discussed*

Acanthosis Hyperplasia of the epidermal cells is present chiefly the prickle cell layer There are several types

1 Regular or irregular acanthosis is seen frequently *in traumatized* lesions such as neurodermatitis

2 Psoriasiform acanthosis is characterized by elongation and clubbing of the rete pegs

3 Plate like acanthosis is characteristic of lichen planus

4 Wild acanthosis is commonly referred to as pseudoepitheliomatous hyperplasia and is described later on

*Anaplasia* is considered when the cells display changes toward undifferentiated embryonal form as in malignancy Giant sized nuclei increased mitosis multinucleated cells loss of prickles compressed and abnormal appearing cells are examples of anaplasia

Atrophy Reduction in size and function of the anatomical structure is represented by senile skin radiation sequelae and pressure *atrophy from* underlying tumor masses

*Dyskeratosis* is defined as any abnormality in the process of keratinization Individual cell keratinization is *sometimes seen in senile keratosis* and epidermoid carcinoma Corps ronds are usually located in the granular layer and are deeply stained (basophilic) and surrounded by a clear halo Grains are small *elongated nuclei found in the horny layer* Keratosis follicularis contains all forms of benign dyskeratosis

*Pseudoepitheliomatous hyperplasia* is the name given to a wildly hy

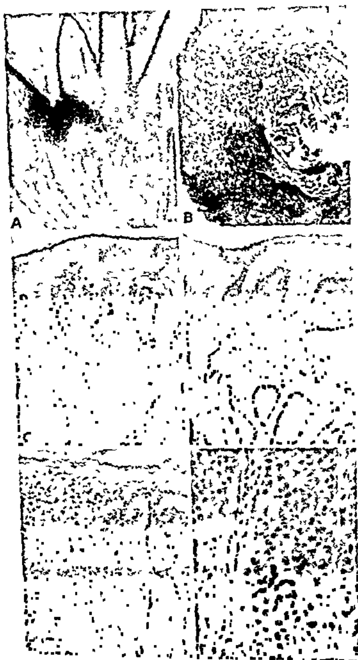



Plate 119

*Benign and Malignant Tumor-* acanthosis and bending of the rete recognized from the homogeneous cells are seen exclusively in the up deeply staining basal cells infiltrat *prickle cell epithelioma* there is a m whorls and pearls F, *melanoma* is cells

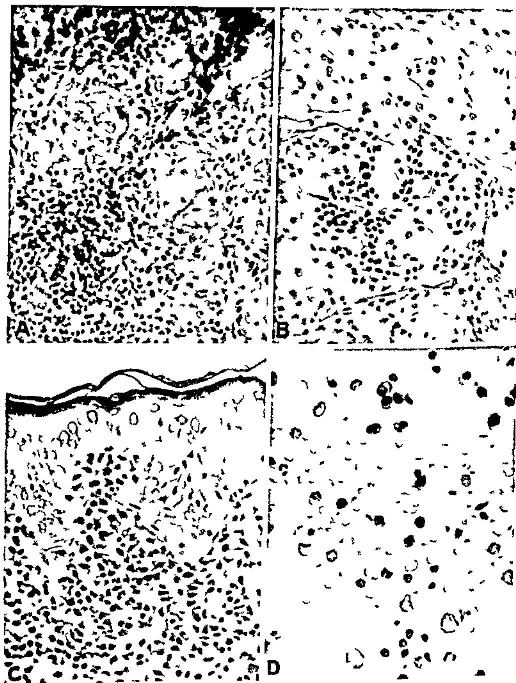



Plate 118

***Cellular Morphology*** A in lupus vulgaris *lymphocytes epithelioid cells* and *giant cells* may be seen B in xanthoma there are *foam cell* and *lymphocytes* C the large number of *mast cells* is typical of the tumor stage of urticaria pigmentosa D *plasma cells* are found in syphilis and some other disorders

3 *Touton cell* is a foamy fat containing giant cell of xanthomas The nuclei are arranged in a circle around homogenized nonfoamy cytoplasm The foamy material surrounds the nuclei

4 *Sternberg Reed* The nuclei are large vesicular and sometimes multinucleated The cell is a diagnostic feature of Hodgkins Disease

Plasma Cells The nucleus is always located off center and the cytoplasm stains slightly basophilic Plasma cells are present in syphilis (perivascularly) and in chronic inflammatory lesions i e pilonidal sinuses acne keloid and nonspecific granulomas

Mast Cells These cells are usually spindle shaped and the nucleus is oval or round The granules are basophilic and contain heparin In the tumor stage the cells are cuboidal in shape and the cytoplasm is vacuolated Special stains such as polychrome methylene blue and toluidine blue stain the granules specifically The mast cell is present in large numbers in urticaria pigmentosa

## 4 Physiology

A complete discussion of the broad and involved field of physiology of the skin is beyond the scope of this book However some mention of the functions of the skin in relation to recent work may be of interest The normal skin has undergone a careful study in relation to function The promise for the future is great when comprehensive investigations of diseases of the skin are undertaken with equal thoroughness

The dependence of the body on the skin to assist in heat regulation is well known Less commonly appreciated are some of its other functions Brief comments are offered on sensation protection permeability and secretion in the light of some of the recent developments

### Sensation

Sensory nerves mediating pain (pruritus) touch and temperature pass through the dermis to the hair follicles and apparently to the basement membrane of the epidermis There is some doubt whether nerves penetrate the epidermis The autonomic nerves pass to the apocrine sweat glands and the arrector pili muscles (adrenergic) and to eccrine sweat glands (cholinergic) This however is not a hard and fast rule

### Protection

When one considers that the epidermis is less than 0 5 mm thick it is astonishing how much protection it offers The outer layer of keratin is an extremely resistant albuminoid protein It is impervious to the ordinary ranges of pH electrolytes water etc The stratum lucidum apparently is isoelectric and the site of electrolyte repulsion The basement membrane is another protective layer

### Permeability

Substances so far tested with tracer elements show some degree of penetration through the skin As a rule material enters the skin through

perplastic but benign epithelium which is secondary to other pathological processes It is seen in the granulomatous and ulcerative lesions of deep mycosis, tuberculosis cutis, syphilis, foreign body reactions and halogen eruptions

**Hyperplasia** The numerical increase of cells can be applied as a description of the epidermal cells (acanthosis) There is hyperplasia of the capillaries in granulomatous tissue Sebaceous glands are increased in benign sebaceous adenoma

*Parakeratosis* is the retention of pyknotic nuclei in the keratin layer The granular layer is missing in these areas This phenomenon is often seen in senile keratosis, psoriasis, verruca and dyskeratotic disease

*Spongiosis* represents intercellular edema which, in the extreme form develops into vesiculation This is frequently present in acute eruptions such as contact dermatitis and erythema multiforme

*Degenerations*

1. Elastic tissue stains basophilic in senile degeneration, and radiation sequelae
2. Collagen degeneration
   *Acidophilic* or hyaline degeneration develops in keloids
   *Basophilic* degeneration is commonly found in senile skin and lupus erythematosus (discoid variety)
   *Amyloid* degeneration usually stains basophilic
   *Mucoid* degeneration is present in myxedema and in tumor masses
   *Granular* degeneration is a feature almost exclusively of granuloma annulare

## Cell Morphology

*Histiocytes* are large mononuclear cells seen in nonspecific inflammations and are somewhat variable in appearance

1. Macrophages are histiocytes which contain phagocytized material
   A Chromatophores are melanin or hemosiderin laden histiocytes
   B Foam cells (lipophage) contain fat and are present in xanthomas
2. Epithelioid cells are a type of histiocyte present in sarcoid reactions tuberculous granulomas and foreign body reactions

*Lymphocytes* are small mononuclear cells seen in small numbers in most inflammatory processes They are seen in large solid masses chiefly in the lymphomas

*Eosinophiles* are classified as cells containing eosinophilic granules and when the cytoplasm stains red They are commonly present in allergic reactions and dermatitis herpetiformis

*Giant Cells* are of several types

1. *Foreign body giant cells* are large multinucleated cells The nuclei are irregularly clumped Functionally they are phagocytic for lipoids, tissue disintegration products and organisms
2. *Langhans' cell.* Nuclei are arranged in a circle or arc around a clear center This cell is more frequently seen in tuberculous processes

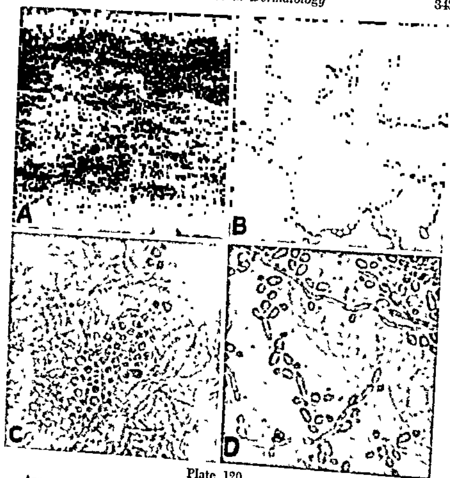



Plate 120

*Appearance* ... spores forming ... filaments in ...

... of dextrose agar is as follows

| | |
|---|---|
| Agar (granular) | 18 gm |
| Peptone (Difco) | 10 gm |
| Dextrose (technical) | 40 gm |
| Distilled water | 1000 cc |

If facilities are not available to process the media, it may be obtained in small bottles from (1) Mr Jim Pipkin, 108 Tendicks St, San Antonio, Texas or (2) Dermatological Medical Company, 3053 Rosslyn St, Los Angeles

the pilosebaceous apparatus Oil soluble substances pass through more readily than water soluble substances, as one would expect

As pointed out earlier, electrolytes penetrate poorly Gases readily permeate the skin, with the curious but understandable exception of carbon monoxide

Carbohydrates and protein do not pass the skin barrier

### Secretion

The sebaceous gland is a halocrine gland secreting a complex lipid (⅓ neutral fat, ⅓ sterols, ⅓ fatty acids) over the skin surface Recent work indicates that the fatty acid fraction may play an important role in acne and seborrheic dermatitis

Eccrine sweat is composed of water electrolytes, urea and some lactate There are no proteins, carbohydrate or lipids in normal sweat Sweat glands are thermally stimulated for the most part, although the palms, soles and forehead are under some cerebral control

The sterile sweat secreted by the apocrine glands is odor free, bacteria produce the characteristic odor reacting with the protein and/or carbohydrate present in the sweat

## 5. Mycology

In order to assist in the diagnosis of fungus infections, two simple office procedures are available

The first is the demonstration of fungus spores and hyphae by direct examination of hairs, scales or nail scrapings It is desirable to clean with Zephiran solution the part from which the specimen is to be obtained The material is usually collected on the dull blade of a scalpel from which it is transferred to a clean glass slide A drop of 10 per cent sodium hydroxide is added and a cover slip applied The slide may be gently heated over a bunsen burner for a few minutes or left to soak without heating for a slightly longer period The specimen is then examined under the microscope (Plate 120) With practice in selecting the right material and experience in interpreting the slide this simple technical procedure should prove of considerable value It may be stressed that stains are unnecessary

The second laboratory aid is the cultivation of pathogenic fungi The specimen is usually collected on a knife blade after partial sterilization of the skin by swabbing on Zephiran solution It is transferred directly to the surface of dextrose agar, and incubated at room temperature Bacteria grow poorly or not at all If necessary bacterial inhibitors may be added to the media although in our laboratory this has not been found necessary for routine work Identification of pathogenic growths is usually possible in 7 to 10 days, with some species requiring as long as 3 weeks before the features can be identified, (Plate 121) At times material from the culture is examined in a wet preparation or in a stained slide in order to demonstrate spores or other identifiable species characteristics

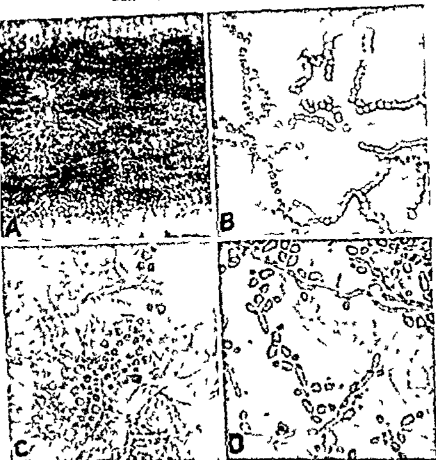



Plate 120

*Appearance of Fi* D
spores form ng a n ant
filaments n scrap ngs f
ce ntoured walls and s

The formula for dextrose agar is as follows

| | |
|---|---|
| Agar (granular) | 18 gm |
| Peptone (Difco) | 10 gm |
| Dextrose (technical) | 40 gm |
| Distilled water | 1000 cc |

If facilities are not available to process the media it may be obtained in small bottles from (1) Mr Jim Pipkin 108 Tendick's St San Antonio Texas or (2) Dermatological Medical Company 3053 Rosslyn St Los Angeles

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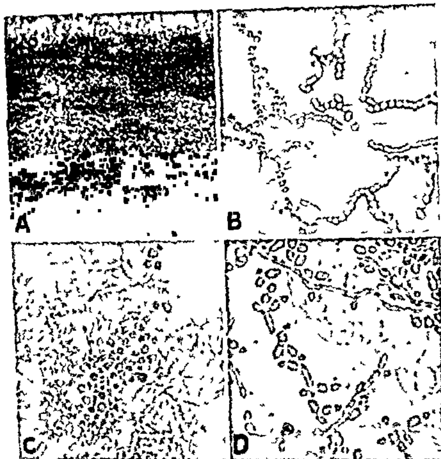



*Plate 120*

*Appearance of* [illegible]
spores [illegible]
filame [illegible]
contou [illegible]

The formula for dextrose agar is as follows

| | |
|---|---|
| Agar (granular) | 18 gm |
| Peptone (Difco) | 10 gm |
| Dextrose (technical) | 40 gm |
| Distilled water | 1000 cc |

[illegible]

in st [illegible]
Texa [illegible] Company 6055 Rosslyn St, Los Angeles

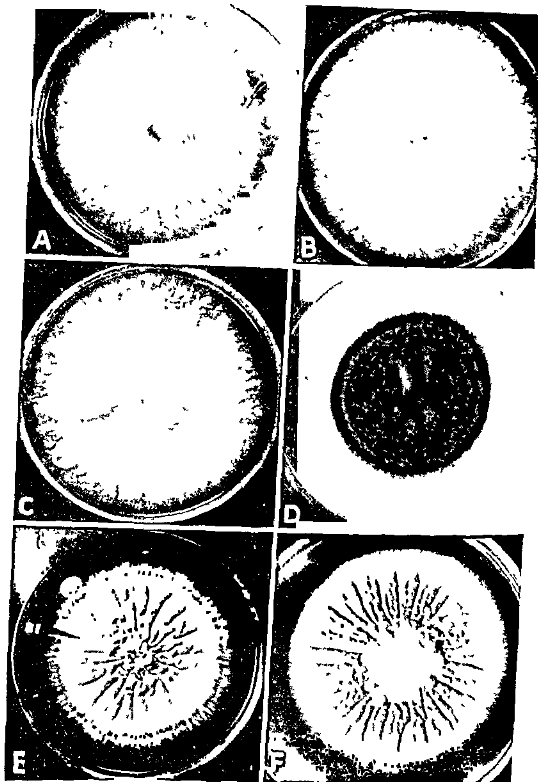



**Plate 121**

*Dermatophytes in Culture* Species of fungi grown at room temperature on dextrose agar A, *Microsporum audouini*, a common cause of tinea capitis B, *Microsporum canis*, the usual isolate from tinea circinata C, *Trichophyton mentagrophytes*, often cultured from acute fungus infections of the feet D, *Trichophyton rubrum*, the cause of a syndrome of chronic type involving the nails, feet and other areas of skin E, *Trichophyton tonsurans*, responsible for a resistant type of scalp infection F, *Epidermophyton floccosum*, the agent causing tinea cruris

# Bibliography

## General Texts

For those who interest in dermatology has been stimulated and who wish to study the subject in more detail, the following comprehensive texts are suggested


Andrews, G C Disease of the Skin, ed 4 Philadelphia, W B Saunders Co, 1954

Becker, S W, and Obermayer, M E Modern Dermatology and Syphilology, ed 2 Philadelphia, J B Lippincott Co, 1947

Darier, Jean, and Sabouraud, R J A Nouvelle Pratique Dermatologique, Paris, Masson & Cie, 1936 (8 volumes)

Ingram, J T, and Brain R T Sequeira's Diseases of the Skin, ed 6 New York, The Macmillan Co, 1957

Jadassohn, J Handbuch der Haut- und Geschlechtskrakheiten Berlin, J Springer, 1927 (a tremendous tome—written by numerous European authorities)

Diseases of the Skin, ed 8 Philadel

Kligman, A M Dermatology Phila-

Sutton, R L Jr Diseases of the Skin, ed 11 St Louis, C V Mosby Co, 1956


## Special Monographs

Listed below are texts devoted to specific subjects which contain discussions on the basic fundamental aspects of dermatology and the related sciences, including historical phases

### Allergy and Immunology


Low, R C Anaphylaxis and Sensitization New York, William Wood & Co, 1925

Sheldon, J M, Lovell, R G, and Mathews, K P A Manual of Clinical Allergy Philadelphia, W B Saunders Co, 1953

Sulzberger, M B Dermatologic Allergy Springfield, Charles C Thomas 1940

**Anatomy**

Montagna, W The Structure and Function of Skin New York, Academic Press, 1956

**Bacteriology**

Dubos, R J, Ed Bacterial and Mycotic Infections of Man Philadelphia J B Lippincott Co, 1952

Zinsser, H Textbook of Bacteriology (Smith revision) New York D Appleton Century-Crofts Co, Inc, 1952

**Chemistry**

See standard texts in organic and physiologic chemistry.

**Embryology**

Cockayne, E A Inherited Abnormalities of the Skin and Its Appendages New York, Oxford University Press, 1953

**Historical**

Pusey, W A The History of Dermatology Springfield, Charles C Thomas, 1933

Shelley, W B, and Crissey, J T Classics in Clinical Dermatology Springfield, Ill, Charles C Thomas, 1953

**Mycology**

Conant, N F, Martin, D S, Smith, D T, Baker, R D, and Callaway, J L Manual of Clinical Mycology ed 2 Philadelphia, W B Saunders Co, 1954

Dodge, C W Medical Mycology St Louis, C V Mosby Co, 1935

Lewis, G M Hopper, M E, Wilson, J W, and Plunkett, O A An Introduction to Medical Mycology, ed 4 Chicago, Year Book Publishers, 1958

Nickerson, W J Biology of Pathogenic Fungi Waltham, Mass, Chronica Botanica Co 1947

Swartz, J H Elements of Medical Mycology New York Grune & Stratton, Inc, 1949

**Parasitology**

Belding, D L Clinical Parasitology New York, D Appleton Century Crofts Co, Inc, 1952

Craig, C F, and Faust E C Clinical Parasitology, ed 5 Philadelphia, Lea & Febiger, 1951

Nauss, R W Medical Parasitology and Zoology New York, Paul B Hoeber, Inc, 1944

**Pathology**

Allen, A C. The Skin A Clinicopathologic Treatise St Louis, C V Mosby Co, 1954

Gans O Histologie der Hautkrankheiten Berlin J Springer 1925
Lever W F Histopathology of the Skin ed 2 Philadelphia J B Lippincott Co 1954
McCarthy L Histopathology of Skin Diseases St Louis C V Mosby Co 1931
McLeod J M H and Muende I Practical Handbook of the Pathology of the Skin ed 3 New York Paul B Hoeber Inc 1946
Percival G H Drennan A M and Dodds T C Atlas of Histopathology of the Skin Baltimore Williams & Wilkins 1947

Physiology

Rothman S Physiology and Biochemistry of the Skin University of Chicago Press 1954

Surgery

Burks J W Wire Brush Surgery Springfield Ill Chas C Thomas 1956
Epstein E Skin Surgery Philadelphia Lea & Febiger 1956

Virology

Blank H and Rake G Virus and Rickettsial Diseases of the Skin New York Little Brown & Co 1955
Rivers T M Ed Viral and Rickettsial Infections of Man Philadelphia J B Lippincott Co 1948

X Rays and Radium

Glasser O Quimby E H Taylor L S and Weatherwax J L Physical Foundations of Radiology New York Paul B Hoeber Inc 1954
Mackee G M and Cipollaro A C X Rays and Radium in the Treatment of Diseases of the Skin ed 4 Philadelphia Lea & Febiger 1946

## Additional References

For the most part the student who wishes to supplement his reading in a particular phase (especially clinical) will find many bibliographic references in the general texts cited previously The additional references listed below for each chapter are selected mainly to mention specific or related texts and monographs of importance If the subject matter is covered adequately in the general texts this is indicated

Chapter 2 *Acne and the Seborrheic Dermatoses*
See general texts

Chapter 3 *Pruritus and Psychosomatic Disorders*
Weiss E and English O S Psychosomatic Medicine ed 2 Philadelphia W B Saunders Co 1949
Wittkower E and Russell B Emotional Factors in Skin Diseases New York Paul B Hoeber Inc 1953

Chapter 4 *The Eczematous Dermatoses*
Ronchese F Occupational Marks and Other Physical Signs New York Grune & Stratton Inc 1948

Schwartz, L, Tulipan, L, and Peck, S M Occupational Diseases of the Skin, ed 2 Philadelphia, Lea & Febiger, 1947

Chapter 5 *Urticaria, "Toxic" Erythemas, Drug Eruptions*

Abramowitz, E W Cardinal points in diagnosis of drug eruptions, M Clin North America 22 1323, 1938

Chapter 6 *The So-Called Collagen Diseases*

Baehr, G, Klemperer, P, and Schifrin, A A group of cases characterized by systemic vascular alterations and associated frequently with lupus erythematodes and endocarditis, Am J Path 11 881, 1935

Keil, H Conception of lupus erythematosus and its morphologic variants, with particular reference to "systemic" lupus erythematosus, Arch Dermat & Syph 36 729, 1937

O'Leary, P A Disseminated lupus erythematosus, Minnesota Med 17 637, 1934

Chapter 7 *The Chronic Vesiculobullous Disorders*

See general texts

Chapter 8 *The Maculopapulo-Squamous Diseases*

See general texts

Chapter 9 *The Pyodermas*

See references under Bacteriology

Chapter 10 *Fungus Infections*

See references under Mycology

Chapter 11 *Tuberculosis and Allied Disorders*

See general texts

Chapter 12 *Syphilis*

Moore, J E The Modern Treatment of Syphilis, ed 2 Springfield Charles C Thomas, 1943

Stokes, J H, Beerman H, and Ingraham, N R Modern Clinical Syphilology, ed 3 Philadelphia, W B Saunders Co 1944

Thomas, E W Syphilis Its Course and Management New York The Macmillan Co 1949

Chapter 13 *Virus and Other Infections*

See references under Virology

Arnold, H L Modern Concepts of Leprosy Springfield, Ill Charles C Thomas, 1953

Rogers, L, and Muir, E Leprosy ed 3 Baltimore, Williams & Wilkins Co, 1946

Chapter 14 *Diseases Due to Animal Parasites*

See references under Parasitology

Chapter 15 *Hyperpigmentation, Depigmentation, Atrophy*

See general texts, particularly Becker and Obermayer, Modern Dermatology and Syphilology

Chapter 16 *Congenital (Nevoid) Anomalies*
See general texts

Chapter 17 *Disorders of the Mucous Membranes*
Prinz, H, and Greenbaum, S S Diseases of the Mouth and Their Treatment, ed 2 Philadelphia, Lea & Febiger, 1939

Chapter 18 *Diseases of the Nails and Hair*
Behrman, H T The Scalp in Health and Disease St Louis, C V Mosby Co, 1952
Heller, J Krankheiten der Nagel Berlin, Hirschwald 1900
Pardo-Castello, V Diseases of the Nails, ed 3 Springfield, Charles C Thomas, 1946
Savill, A The Hair and Scalp, ed 4 Baltimore, Williams & Wilkins Co, 1952

Chapter 19 *Diseases Due to Physical Agents*
See general texts

Chapter 20 *Metabolic Diseases*
Thannhauser, S J Lipidoses ed 2, (H A Christian, Ed) New York, Oxford University Press, 1950

Chapter 21 *The Skin and Other Organs*
Behrman, H T Dermatologic Clues to Internal Disease New York, Grune & Stratton Inc, 1947
Wiener, K Skin Manifestations of Internal Disorders St Louis, C V Mosby Co 1947
Wiener, K Systemic Associations and Treatment of Skin Diseases St Louis C V Mosby Co, 1955

Chapter 22 *Benign Tumors*
See general texts

Chapter 23 *Premalignant and Malignant Tumors (Including Lymphoblastoma)*
Eller J J and Eller W D Tumors of the Skin, ed 2 Philadelphia, Lea & Febiger 1951
MacKee G M, and Cipollaro, A C Cutaneous Cancer and Precancer New York American Journal of Cancer, 1937

Chapters 24 25 *Dermatologic Therapy, Dermatologic Formulary*
Goodman, L and Gilman, A The Pharmacological Basis of Therapeutics New York The Macmillan Co, 1941
Peck, S M and Klein, G Therapy of Dermatologic Disorders Philadelphia Lea & Febiger, 1951
Sulzberger, M B, and Wolf J Dermatologic Therapy in General Practice ed 3 Chicago, Year Book Publishers, 1948

Schwartz, L, Tulipan, L, and Peck, S M: Occupational Diseases of the Skin, ed 2 Philadelphia, Lea & Febiger, 1947.

Chapter 5 *Urticaria, "Toxic" Erythemas, Drug Eruptions*

Abramowitz, E W.· Cardinal points in diagnosis of drug eruptions, M Clin North America 22.1323, 1938

Chapter 6 *The So Called Collagen Diseases*

Baehr, G, Klemperer, P., and Schifrin, A. A group of cases characterized by systemic vascular alterations and associated frequently with lupus erythematodes and endocarditis, Am J Path 11 881, 1935

Keil, H Conception of lupus erythematosus and its morphologic variants, with particular reference to "systemic" lupus erythematosus, Arch Dermat & Syph 36.729, 1937

O'Leary, P. A: Disseminated lupus erythematosus, Minnesota Med 17 637, 1934

Chapter 7 *The Chronic Vesiculobullous Disorders*

See general texts

Chapter 8 *The Maculopapulo-Squamous Diseases*

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Chapter 9 *The Pyodermas*

See references under Bacteriology

Chapter 10 *Fungus Infections*

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Chapter 12 *Syphilis*

Moore, J E The Modern Treatment of Syphilis, ed 2 Springfield, Charles C Thomas, 1943

Stokes, J H, Beerman, H, and Ingraham, N R Modern Clinical Syphilology, ed 3 Philadelphia, W B Saunders Co, 1944

Thomas, E W Syphilis, Its Course and Management New York, The Macmillan Co, 1949

Chapter 13 *Virus and Other Infections*

See references under Virology

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Chapter 14 *Diseases Due to Animal Parasites*

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# Dermatologic Periodicals and Abstracts

Textbooks may be considered static in that the information they contain is a permanent record only to be changed at long intervals by revision for new editions. Indeed, a textbook is out of date before it is printed. To keep abreast of progress in the specialty, a physician must read with regularity, the special journals devoted to dermatology and syphilology, some of which are listed below:

Acta Dermato-Venereologica (Stockholm—in English or English summary)
A. M. A. Archives of Dermatology
Annales de Dermatologie et de Syphiligraphie (French)
Archiv fur Dermatologie und Syphilis (German)
British Journal of Dermatology and Syphilis
Dermatologische Wochenschrift (German)
Journal of Investigative Dermatology
Revista argentina de dermatosifilologia
Year Book of Dermatology and Syphilology (abstracts of world literature published during the preceding year, issued annually)

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